American Gas Association MONTHLY

War Aid Is Convention Keynote

•

Titanic Struggle of Resources

•

Increasing Gas Plant Capacity

•

How Accountants Met the Blitz

•

Gas Operating Problems Aired

June 1942

VOLUME XXIV NUMBER 6

VEGETABLES *and your "Victory Cooking"!*

THE BALANCED DIET RECOMMENDED BY YOUR GOVERNMENT INCLUDES TWO VEGETABLES OR MORE EVERY DAY...

THIS CHART, SUGGESTED BY THE GAS INDUSTRY, SHOWS THE KINDS TO EAT AND WAYS TO PREPARE THEM

How to get variety in your two vegetables a day

Green or yellow, and others

—some raw, some cooked

MON.
Beet Greens
Grated Carrot and Cabbage Salad

TUES.
Green Beans
Watercress Salad

WED.
Buttered Carrots
Swiss Chard

THURS.
Spinach
Lettuce, Tomato and Cucumber Salad

FRI.
Lima Beans
Cole Slaw with Green Pepper

SAT.
Mustard Greens
Sweet Potatoes

SUN.
Buttered Peas
Tossed Green Salad (Radishes, Green Pepper, Chicory)

How to add an exciting new flavor to some old standbys

SPINACH
Cook with raw bacon
Or chop fine, add cream sauce and sauted onion

BROCCOLI
Serve with cheese sauce
Or lemon butter sauce

GREEN BEANS
Serve with sauted onion and mushroom sauce
Combine with corn as casserole dish

CAULIFLOWER
Dip flowerets in batter and fry in deep fat
Or with drawn butter and browned bread crumbs

SWEET POTATOES
Mash and bake with juice and grated rind of orange
Combine with apples in casserole

SQUASH
Bake acorn squash, fill halves with creamed left-over vegetables
Serve summer squash sauted in butter with onions

ONIONS
Stuff with sausage meat and bake
Serve boiled scallions on toast melted butter sauce

DANDELION
Serve raw as salad with tomatoes and French dressing
Cook as spinach, serve with vinegar

PARSNIPS
Boil, then bake "au gratin"
Boil, then pan fry in butter

How to save those important vitamins

1. Cook vegetables in as small an amount of water as possible.
2. Bring to boiling point quickly over high gas flame.
3. When boiling begins, turn gas flame low and cook gently.
4. Use covered utensils to keep steam in.
5. Cook vegetables as short a time as possible.
6. Do not use soda in cooking vegetables.
7. Your gas range is ideally suited to modern "waterless cooking" which saves vegetable vitamins and minerals. Because of its *flexibility* you get the exact degree of heat needed.

GAS—THE WONDER FUEL FOR COOKING

TO THE 85,000,000 AMERICANS WHO RELY ON GAS FOR COOKING—
For years gas has continued to be the preferred fuel for cooking in millions of American homes. And today the gas industry considers it a patriotic privilege to support our Government's National Nutrition Program. Among the thousands of persons employed in this industry are some 1,500 Home Service Consultants who are working to bring about a higher standard of health in their respective communities.

★ *Buy United States Savings Bonds and Stamps*

American Gas Association MONTHLY

CONTENTS FOR JUNE 1942

No less than four separate A.G.A. Conferences and the Natural Gas Convention are reported in this issue and, with eight extra pages, the MONTHLY *is still unable to do justice to the wealth of material presented. . . . The convention was an outstanding success in that it concentrated attention on factors vital to winning the war. For the first time, a member of the President's War Cabinet, Hon. Harold L. Ickes, was an honored guest and speaker. All gas men should read his inspiring message which gives credit for past performance but calls for even greater coordination of effort to achieve victory. . . . Gas production problems are highlighted in Major Forward's informative summary presented at the Production and Chemical Conference. Other features of that valuable meeting are covered under the Technical Section along with a review of the Distribution and Motor Vehicles Conferences. . . . R. J. Horn describes a method of obtaining increased capacity with water gas sets and R. B. Allen contributes a timely paper on reconditioning steel mains, a subject of increasing importance because of metal shortages.*

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Hon. Harold L. Ickes, Secretary of the Interior and Petroleum Coordinator for War, addressing the Gas Industry Dinner, May 6, during the Natural Gas Convention in New Orleans. Seated is J. French Robinson, chairman of the Natural Gas Section.

American Gas Association MONTHLY

JAMES M. BEALL, *Editor*

WAR SUPPORT
. . . Pledged at Annual Natural Gas Convention

IN an atmosphere charged with the deadly seriousness of the times, the responsibilities of a great and growing industry, and the knowledge of the indispensability of that industry to the war effort, the thirty-seventh annual convention of the Natural Gas Section, American Gas Association, was held simultaneously with the nineteenth annual Distribution Conference in New Orleans, La., May 4-7. A total of more than thirty separate meetings was included in the 4-day program. At every one of these meetings cooperation with the war program was the first order of business. Nothing demonstrated this better than the presence at the convention of a member of the President's War Cabinet, Hon. Harold L. Ickes, who presented an outstanding address.

Demonstrating a unity of purpose and firm resolve to win the war, the natural gas industry showed its willingness to make any sacrifices necessary to achieve final victory. Promises of cooperation and coordination with the government's program were implemented with specific plans of operation and supported by a record of past accomplishment.

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At the first general session, A. B. Paterson as president of the host company, New Orleans Public Service Inc., welcomed the 762 registered delegates to New Orleans and described local points of interest.

J. French Robinson, president, The East Ohio Gas Company, Cleveland, and chairman, Natural Gas Section, sounded the keynote of the convention at this session when he said: "The attitude of our industry, which moves it in all of its actions of this war, is one of complete cooperation with the government. There can be no other way. It is the patriotic way and it is the common sense way."

In a plea that the industry so conduct its operations that the basic American economy is retained during the war and afterwards, Mr. Robinson made three general observations regarding the duties of natural gas operators to their customers, as follows: "The first is that our customers look to us for help now more than ordinarily. The second is, that if we merely wave the flag and shout how patriotic we are, and how many bullets natural gas is contributing to the cause, we are not discharging our proper obligations to our customers, our country, or our stockholders. My third is that, in helping people get better results with natural gas by teaching them the values and practices of better gas utilization, we are helping them through the war, we are contributing materially to a better economy of this great energy resource which is a war effort in itself, and we are preparing for better living, all around, after the war." The complete text of Mr. Robinson's remarks was published in the May issue of the A. G. A. MONTHLY.

Secretary of the Interior Ickes, as Petroleum Coordinator for War, reviewed the steps taken to coordinate the natural gas and petroleum industries for emergency action and paid tribute to the conservation measures taken during the last decade. "It is because of the conservation that we have practiced in peace time that we now have sufficient reserves of precious war resources." He spoke Wednesday evening at the Gas Industry Dinner where he was the guest of honor.

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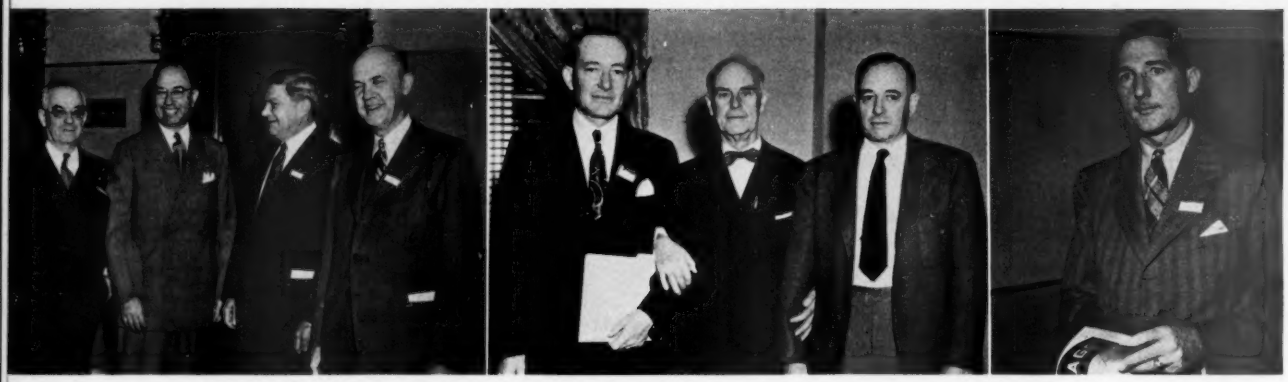
Recognizing the importance of natural gas and natural gasoline in the war, Mr. Ickes announced the creation of a Natural Gas and Natural Gasoline Division which will function in the same manner and on the same level with other operating divisions of the petroleum coordinator's office.

He reassured those who felt that the Federal government had taken over full control of the gas and oil business and that state laws and the functioning of state regulatory bodies were no longer necessary or important, declaring that "there is no basis for such a point of view. It has been necessary



Presiding officers and prominent delegates at the Natural Gas Convention. Left to right: Alfred Hurlburt, vice-president, Republic Natural Gas Co., Dallas; J. French Robinson, chairman, Natural Gas Section, and president, The East Ohio Gas Co.; A. B. Paterson, president, New Orleans Public Service Inc.; Burt R. Bay, vice-chairman, Natural Gas Section, and president, Northern Natural Gas Co.; R. M. Conner, director, A. G. A. Testing Laboratories; George S. Hawley, president, American Gas Association, and president, The Bridgeport Gas Light Co.; Arthur F. Bridge, vice-president, American Gas Association, and vice-president, Southern Counties Gas Co.; Dr. Frank H. Dotterweich, Texas College of Arts and Industries

to impose, for the period of the war, a certain amount of regulation of the oil and gas industries just as it has been necessary to regulate other essential industries. However, close integration of the full efforts of all parties concerned will be required if the gas and oil industries are to meet successfully the challenge of war." He expressed gratitude at the willing and wholehearted cooperation thus far received from the oil and gas industries. The text of his address is included elsewhere in this issue.

George S. Hawley, president of the American Gas Association, and president of the Bridgeport Gas Light Co., Bridgeport, Conn., speaking at the same dinner with Secretary Ickes, also stressed war responsibilities, stating: "Today we face conditions so serious that in retrospect all previous experiences seem mere dress rehearsals leading up to the greatest performance of all time."

Reviewing the Association's outstanding war record, President Hawley emphasized that "no part of this record has been achieved as the result of some special or general advantage to the industry itself. On the contrary, the record has been set up in spite of operating, maintenance, extension, priority and other difficulties that have increased in complexity and severity ever since emergency came upon us."

"All this," he continued, "has been accomplished in the face of the fact that the gas industry cannot, like other industries, be wholly converted from a condition of peace to one of war; for in addition to the vital part this industry plays in the fabrication of the materials of war, we must in the interest of public health, nutrition and morale, maintain an uninterrupted and high standard of service to the civilian population, most of whom are engaged in war work in some form."

A special feature of the convention was a conference the day after the formal program at which gas industry executives and government officials discussed orders and policies of the Office of Petroleum Coordinator for War affecting the natural gas industry. Forum leaders represented at this meeting were: Robert E. Allen, assistant deputy coordinator, Office of Petroleum Coordinator for War, Washington, D. C.; Justin R. Wolf, council, O.P.C., and Paul M. Raigorodsky, assistant director of production, Natural Gas and Natural Gasoline Section, O.P.C.

Brief discussions were made at this conference by the following district

The Gas Industry Luncheon in New Orleans at which home service, wartime nutrition and food conservation were discussed. Above is Dr. Ernestine Becker, Johns Hopkins University food expert, explaining the government's nutrition program

chairmen of O.P.C. committees or their representatives: J. French Robinson (District No. 1); Burt R. Bay (District No. 2); N. C. McGowen (District No. 3); R. W. Hendee (District No. 4); William Moeller, Jr. (District No. 5). Informal discussion from the floor followed and various phases of the government's program were clarified.

Problems of gas distribution were discussed at the first general session by C. S. Goldsmith, chairman of the Distribution Committee. He said that basic knowledge of the operation and maintenance of domestic appliances is desirable for customers, and related how some companies are instructing them.

Operating Economies Essential

While the immediate aim of the gas industry is to assist in the successful prosecution of the war, the long term objective must be to stay in business and to make such contributions to the economic system of the country as will best help the American way of life to continue, Allan W. Lundstrum, gas operating consultant, Ebasco Services, Inc., told the delegates. It can accomplish neither objective effectively without maintaining its financial solvency and having cash for the necessary phases of its operation, he said.

After citing the various factors tending to increase operating expenses, such as taxes, labor costs, fuel, materials, transportation and insurance costs, Mr. Lundstrum concluded that "operating economies will have to be effected, but it is almost certain that this problem will ultimately have to be solved by actually getting some increase in rates."

Convention Cancelled

Due to war conditions, the annual convention of the American Gas Association which was set for San Francisco in September, has been cancelled. This decision was made at the Executive Board meeting in New Orleans, May 4.

A committee appointed by the President will consider the time, place and program of the Annual Meeting.

The question of solvency was also discussed by Edward L. Love, vice-president of the Chase National Bank, New York, N. Y., who strongly advised the necessity of operating on a basis that will assure the industry's stability after the war. He stated that the industry must approach the Federal tax problem realistically and must prepare to tighten its belt further by limiting dividend distributions, since a larger part of earnings may be needed for extraordinary expansion.

The prescription for the industry "must of necessity be harsh," said Mr. Love, but he added that "the end is worth the sacrifice." He declared that reserves must be set up for every known contingency, that the debt structure of natural gas companies requires steady and consistent reduction, that all avenues of finance should be kept open so that any one of them may be utilized as needed and that continuity of strong management should be retained. Also, he said, construction budgets should be reappraised so that every dollar is fully utilized.

Natural Gas at Peak

Mr. Love noted that deliveries of natural gas in this country now are at least one-third greater than they were in the early part of 1939, when war broke out in Europe. "More than one half of this product," he said, "is being consumed by industrial customers, many of whom have either converted or are in the process of converting their plants to the production of war supplies."

The first general session closed with an inspiring account of China's contribution to the united war effort by Honorable Gung-Hsing Wang, vice-consul of China, New Orleans, La.

Burt R. Bay, president, Northern Natural Gas Co., Omaha, and vice-chairman of the Natural Gas Section, presided at the second general session which opened with an address on "Vocational Training in the Natural Gas Industry," by M. V. Cousins, chairman of the Section's Vocational Training Committee and personnel director, United Gas Pipeline Company, Shreveport. Mr. Cousins described the committee's work in cooperation with the state vocational training departments and stated that this work was being

Making a last-minute check of the convention agenda are E. Holley Poe, secretary, Natural Gas Section, and Chairman Robinson

Edward L. Love, vice-president, Chase National Bank, New York (center), a general sessions' speaker, with Lyon F. Terry, and T. M. Ritchie, Chase National Bank

Two old-timers who never miss the Natural Gas Convention: Col. M. W. Walsh, Louisville, Ky., and C. W. Sears, Altadena, Calif.

H. V. Coes, Ford, Bacon & Davis, Inc.; Dr. Harold Vagtborg, director, Institute of Gas Technology; and Dr. Rex Harlow, president, American Council on Public Relations

Ready for business. Left to right: Edward P. Noppel, Ebasco Services, Inc.; C. E. May, New Orleans Public Service Inc.; J. V. Strange, United Gas Corp.; Eugene D. Milener, American Gas Association; J. K. Knighton, Servel Inc.; and Louis Ruthenburg, Servel Inc.

temporarily suspended because of war activity.

At the present time, Mr. Cousins reported, the natural gas industry is experiencing the greatest labor turnover it has ever known. "Not only must we hire older men, we must also employ women, even perhaps using women in some of the field operations in which we formerly thought only men could be used successfully," he said. The development of short texts that would assist these new employees in their work should be considered by the industry, he declared.

Women in Industry

Discussing war problems previously at the Gas Industry Luncheon, Major Alexander Forward, managing director, American Gas Association, reported on a survey of women's work at the front in Great Britain which revealed that "nearly 200 women are employed in the works (not in the offices) of gas companies in the Manchester area alone, besides a number of others in distribution. Forty women in the City of Manchester alone are engaged in maintenance work as pipe fitters and assistants, screening coke and shovelling coal, stitching bags of sulphate of ammonia and work on calorific tests in the laboratory."

Major Forward also called attention to the importance of home service workers in the national nutrition program, stating that "on the Washington front, nutrition is regarded as a war weapon of the very highest importance." He said that home service women of the gas industry are actively engaged in work of local Civilian Defense Councils and in every other channel of centralized and decentralized war work. "They fit in perfectly; there is no element of the whole population so well trained and so well adapted for this particular job; they are in great demand."

Featured speakers at this luncheon were J. Ernestine Becker, Johns Hopkins University, who spoke on "Wartime Nutrition and Food Conservation," and Mildred Clark, home service director, Oklahoma Natural Gas Co., Tulsa, who presented the wartime home service program. H. Carl Wolf, president, Atlanta Gas Light Co., Atlanta, described the mobile kitchen for service crews which was illustrated in the May issue of the MONTHLY.

The war effort is bringing about a rapid decentralization of industry and a shift in markets, some of which will be permanent and some temporary, H. V. Coes, marketing expert of Ford Bacon & Davis, Inc., New York, pointed out in his general sessions' address "Marketing Problems Under War Conditions." When the United Nations win the war, Mr. Coes said, special plants which are principally for production of technical war materials such as powder plants, loading plants, some types of chemical plants, of shipyards and the like, probably will be closed down. "Other new plants, such as airplane, tank, internal combustion engine and chemical plants may be converted to peacetime products and remain permanent parts of our post war economy."

Asserting that "the customer has a short memory," Mr. Coes advised the gas industry to continue its advertising. "Experience has shown generally that no company that has discontinued advertising permanently has been able to hold a position of leadership in its industry or to maintain its position in the market," he said. "Once a position of leadership has been lost through failure to continue advertising aggressiveness, it is almost impossible to regain it."

"The task of public relations is increased, not reduced, by the war," Dr. Rex F. Harlow, president, American Council on Public Relations, and associate professor, Stanford University, told the gas men. "A company will have public approval in the years ahead only if it keeps properly before the public day by day," he said.

Sound public relations today are divided into two phases, said Dr. Harlow. "The first has to do with winning the war, the second with reconstruction after the war. No company can afford to slight either of these phases."

Research Program

Major objectives of the Institute of Gas Technology, Chicago, were described by Harold Vagtborg, director of the Institute, who pointed out that this organization is engaged in three types of research, namely, purely scientific research, research on basic industry problems, and sponsored research projects. This important program has been described in previous issues of the MONTHLY.

The final general session closed with an address by Reverend P. A. Roy, S. J., president of Loyola University of the South, New Orleans, who said the Japanese did the Christian nations a great favor by attacking Pearl Harbor, because it woke us up and made us realize we have a fight on our hands if we are to continue our way of life instead of Hitler's.

Separate conferences were held during the convention as follows: Accident Prevention, Accounting, Distribution, Production, Transmission, Residential and Industrial and Commercial Gas Sales. These meetings revealed

that the services of natural gas are part of the war program in many ways not familiar to those outside the industry. For example, in addition to supplying fuel to Army camps, the industry is suggesting menus, giving courses in nutrition and mess management, the arts of cooking and baking practice in field rations, and performing other services which are highly praised by officers of the Army and Navy.

Discussions at the production and transmission sessions emphasized the steady progress under way in these fields. Emphasis was on new and more efficient methods of production, conservation of existing materials, and problems related to increasing capacity for war production purposes.

The convention closed its deliberations on a high plane, which was best expressed by the late George B. Cortelyou, first president of the American Gas Association, in 1918, when this country was exerting every effort to win World War I, in remarks which were quoted by President Hawley at the convention:

"There is one thought," said Mr. Cortelyou, "that overshadows all others at this meeting, in any gathering of Americans anywhere—How can we best serve the nation in this momentous hour of history? I answer for you, as the first official announcement of this Association and as voicing the spirit in which we today assume our new responsibilities. From the beginning of the world conflict, the gas industry has put its forces and its facilities at the call of the government without selfish purpose or expectation of gain. It has already rendered incalculable service, as the official records at Washington attest. It will continue to do so."

100 Years of Service

Gas was first supplied in Toronto on December 28, 1841. Except for local stoppages due to frost and broken mains there has not been a momentary interruption of the gas supply to the citizens of the Ontario metropolis for one hundred years.

Gas Sendout Soars

Gas sendout of The Brooklyn Union Gas Company exceeded 100,000,000 cubic feet a day for six days in a row during a January cold wave. On four of the days the sendout was greater than at any time since the coal shortage of 1926.

SOCIETY OF BRITISH GAS ENGINEERS

Federation House,
Stoke-on-Trent,
27th March 1942

Geo. S. Hawley, Esq.,
President, American Gas Association,
420 Lexington Avenue,
New York.

Dear Mr. President:

Since your letter of January 29th was written much has happened in the various theatres of war. Our enemies have seized many important strategic points, sunk a considerable number of allied ships and can boast that their methods (brutal and gangster-like as they are) have given them valuable results. The reckoning however has yet to be made and I rejoice that your faith and determination in the ultimate victory of our common cause remains unshaken. We are at one with you and will be until the end.

The trouble (and it is common to us both) is that neither of us know the full extent of the other's gigantic effort. We sometimes think that your great nation may listen to the whispering campaign (so assiduously promoted) by our enemies that Britain is neither "all out" nor "all in" this struggle. That is a lie which should be nailed to the counter without delay. Our Ambassador, Lord Halifax, broke a silence which has lasted too long when he revealed in his broadcast to the American nation what Britain was doing. You have been told about our "blitzed" cities; you have seen pictures of the havoc wrought by the Hun, both in London, our ports and great industrial centres; you know something of the story of how we stood up to those hammer blows, but what you do not know and cannot see is the resolution and great determination of our people. We are not good at expressing ourselves; we cannot "put it over" in words, but hope that our deeds will speak for us. Take the workers' side. We cannot tell about our output of munitions and reveal either the number of ships we have built or repaired; we cannot speak of the number of guns, tanks or 'planes we have made; we cannot indicate the extent of the help we have given to the great Russian nation, whose magnificent heroism has given a deeper meaning to the word "patriotism"; we cannot talk about the dislocation of our private business or the transfer of workers and people of all classes to war work, but we want to assure you and through you the American people that when the story can be revealed it will be one worth telling.

Meantime what is happening? In our Press you read of absenteeism and of slackers, but they are so exceptional that they have a publicity value. The overwhelming majority of our people, yes over 90%, are "on their toes" and giving an output which would have been considered impossible in normal circumstances. I speak as an industrialist controlling coal mines, armament works and as a Director of Railways.

If the men of Britain are doing their job, what about our womenfolk? Nothing could be finer than the work they are doing. Home life is harder for them; shopping is difficult and will no doubt become more so, but their cheerfulness and the inspiration they give to their menfolk is magnificent. Mr. President, I hasten to assure you that in this struggle the British worker can prove that he has neither let his country nor the cause down.

As for the industrialist, there is hardly a voice raised against the present measure of taxation and the tremendous difficulties which confront us in adjusting our staffs by reason of the constant call-up of our men to the Services. We are facing taxation (and it is colossal) with cheerfulness. We are paying our taxes promptly. Employer, workman, housewife, we are all linked together to save and lend to our country whatever is possible. Every week workers' savings are expanding. Our Warships Weeks campaign is a sure indication of the measure of our national unity and determination to prevent inflation and see the job through. We are not quitters and never will be.

Our Navy, known as "the Silent Service" is doing, daring and dying, with its matchless and traditional courage. Our seamen of the Mercantile Marine are following the same splendid example and the casualty lists of our gallant seamen prove that nothing can daunt them. The ever-growing roll of those of our armies who have made the supreme sacrifice makes us bow our heads—but with pride. Mr. President, it hurts to think that our efforts, great as they are, are not fully understood. Only an enemy would tempt you to doubt our achievements. If I could ask one thing of you and if I could promise one thing for myself, it would be that we were both determined that there shall be no doubts about each other's loyalty. We are comrades; we are linked together by ties of blood and share that faith in human liberty and freedom which, please God, will endure not only until we have won through but continue in those more spacious days when we will work together for the rebuilding of a world which our children and those who follow after will enjoy in fullest measure.

Yours cordially,

Francis Joseph

President, Society of British Gas Industries

Natural Gas Technicians Report on Operating Problems

ABLE operating men gave the benefit of their experience at the fruitful production and transmission conferences which were held during the A. G. A. Natural Gas Section Convention in New Orleans, May 4-7. The transmission men held three sessions, Monday and Tuesday, May 4 and 5, and the production men sponsored two meetings, both on Monday.

Highly technical in character, these sessions emphasized the rapid progress made in recent years in the production and transportation of gas to large consuming centers. Conservation measures, protection of wells against sabotage, pipe line research, dehydration design, and gas well production methods were among the major topics discussed.

B. M. Laulhere, technical supervisor, Southern California Gas Co., Los Angeles, and chairman of the Transmission Committee, presided at the transmission conference. The production meetings were conducted by C. U. Daniels, vice-president, Oklahoma Natural Gas Co., Tulsa, and chairman of the Production Committee.

Listed below are the subjects and authors included on these programs. While lack of space prevents publication of these papers in the A. G. A. MONTHLY, some of them have appeared in the gas trade press, and all of them will be published in the *Natural Gas Section Proceedings*.

TRANSMISSION CONFERENCE

Cathodic Protection

G. R. OLSON, United Gas Pipe Line Co., Shreveport, Louisiana

Features Associated With a 14" Gas Transmission Line Designed to Operate at 1200 Pounds Pressure

C. E. TERRELL, Southern Natural Gas Company, Birmingham, Alabama

High Pressure Pipeline Research

F. W. LAVERTY, Clark Bros. Company, Olean, New York and
R. L. HUNTINGTON, School of Chemical Engineering, The University of Oklahoma, Norman, Oklahoma

Experimental Data with Wet and Dry Dusts to Determine Effect on Pipeline Transmission and Orifice Coefficients

G. M. KIRKPATRICK, Blaw-Knox Company, Pittsburgh, Penna.

Main Line Automatic Shut-Off Valves

D. C. PALM, *Supt.*, Natural Gas Pipeline Company of America, Chicago, Illinois

Aerial Patrols

C. B. MCMAHAN, *Pilot*, Mississippi River Fuel Corp., St. Louis, Missouri

Construction of Lirette-Mobile Pipeline (A colored motion picture)

W. B. POOR, United Gas Pipe Line Company, Shreveport, Louisiana

Recycling Projects as Conservation Measures

a. Legal Problems
E. H. SELECMAN, Lone Star Gas Company, Dallas, Texas

b. Reserve Determinations
L. T. POTTER, Lone Star Gas Company, Dallas, Texas

c. Plant Operations and Products
HARRY WHEELDON, Lone Star Gas Company, Dallas, Texas

Vibration Elimination and Gas Engine Driven Compressors, Headers and Piping

S. ROSENZWEIG, *President*, The Korfund Company, Long Island City, New York

Practical Problems and Dehydration Plant Design and Operation

THOS. S. BACON, *Research Engineer*, Lone Star Gas Company, Dallas, Texas

Discussion

E. R. BRODEN, Blaw-Knox Company, Pittsburgh, Pennsylvania

A. D. GREENE, United Gas Pipe Line Company, Shreveport, Louisiana

A New Fusion Welding Proces (A colored motion picture showing the construction of a 16" pipeline)

A. L. FORBES, JR., *Vice-President*, El Paso Natural Gas Company, El Paso, Texas

PRODUCTION CONFERENCE

SYMPOSIUM ON DRILLING AND COMPLETION IN HIGH PRESSURE AREAS

Clinton Sand Drilling and Production in Central Ohio

H. H. ROSS, Gas Producing Company of Ohio, Newark, Ohio

Drilling and Completion in High Pressure Areas

FRANK E. KENDRICK, Lone Star Gas Company, Dallas, Texas

Drilling Mud Problems on Deep Wells

C. A. SULLINS, Union Producing Company, Shreveport, Louisiana

Some Factors Affecting Mud Control and Completions in the Chickasha Field

ARNOLD F. PARR, Oklahoma Natural Gas Company, Tulsa, Oklahoma

Mechanical Subsurface Equipment for Protecting Oil and Gas Wells Against Sabotage and Bombing

JOHN O. FARMER, Otis Pressure Control, Inc., Dallas, Texas

SYMPOSIUM ON PROPER PRODUCTION METHODS

Proper Production Methods

R. O. GARRETT, Arkansas Louisiana Gas Company, Shreveport, Louisiana

Running Liners and Production of Gas Through Liners in Panhandle Field

C. I. GALLOUP, Texoma Natural Gas Company, Amarillo, Texas

Remedial Work in Connection with Production Methods

J. H. ISHERWOOD, North Penn Gas Company, Port Alleghany, Pennsylvania

Remedial Work on Gas Wells as Practiced in the Texas Panhandle

L. M. BATTEN, Cities Service Gas Company, Pampa, Texas

Deferment Procedure Is Outlined

J. D. Dingwell, Jr.

RECOGNIZING the importance of retaining trained employees who are essential to the operation of vital public utilities, the Committee on Personnel Practices of the American Gas Association headed by James D. Dingwell, Jr., of the Washington Gas Light Co., Washington, D. C., has prepared a complete outline of suggested procedure for the guidance of companies seeking essential deferments.

Entitled "The A, B, C of Occupational Deferment Procedure," this information was distributed to the Association's membership on May 19. The material was approved by the Committee on War Activities and has the wholehearted endorsement of General Lewis B. Hershey, director of the Selective Service System.

In a letter to Mr. Dingwell, General Hershey said: "I desire to compliment you upon the material and the spirit in which the subject was handled. This type of information being disseminated by industrial and service groups is very helpful to the operation of the Selective Service System and I believe it will go far toward accomplishing cooperation between employers and agencies of our system and will result in more accurate classification."

The purpose of the A. G. A.-recommended procedure is "to retain necessary employees until your company can obtain or train replacements for them." It is pointed out in the report of the Committee on Personnel Practices that utilities generally have been slow to ask for deferment for key men and that it is the duty of employers to see that valuable experience and knowledge are not wasted in the present emergency. A survey of the entire male personnel of each company is recommended.

A Titanic Struggle of Resources

By Hon. Harold L. Ickes

Secretary of the Interior and Petroleum Coordinator for War

THERE are so many important things at this time that I want to talk about, all of them, of course, bearing on the war, that I shall waste no time with preliminaries. Viewed either from an individual or from a community or from a national aspect, the war easily outweighs every other consideration. Nothing else is significant.

For us to spend time reminding each other how petroleum embraces all of the natural hydrocarbons, of which natural gas is one, isn't going to get us far. It isn't even interesting to you who know it so well. To spend this opportunity tracing the processes by which nature has supplemented our wealth of oil supply with natural gas to facilitate its removal from the underground storehouses isn't going to contribute anything to victory. It is too much like going before a roomful of college presidents and running through the alphabet and expecting them to maintain even a mild interest. What *is* important and what *will* help in the prosecution of the war is a consideration of how to harness those hydrocarbons and how to make the best use of them in licking the tar out of millions of cut-throat pirates.

Teamwork Brings Conservation

During the past decade or so, when Hitler and his "co-hordes" were getting ready for war, we in this country were planning peacefully for the conservation of our petroleum resources. We were learning how to recover oil and natural gas efficiently and with sharply decreasing waste. The men of *your* industry and your cousins in the *oil* industry, the state conservation authorities, and the Federal agencies were working together. They were learning all that there was to know about reservoir pressures and how they could be controlled; how they should be maintained in order to keep the gas in solution in the oil; about "pressure sinks" and the need for a regular and conservative spacing pattern; about correlative rights in sharing equitably the productive energy of a gas or an oil field; and in mastering these subjects jointly they learned—most important of all—cooperation.

If it is true—and I have heard it said—that the oil industry and all of its related branches, including your own, gave the country its first and best lesson in wartime team-work, it was due, I have no doubt, to the practice you had during those days when, together, you were learning the alphabet and the subsequent lessons of your industry. In doing those things, you were not planning for war, yet you were, surprisingly enough, making it possible for the country to be ready if war should come at least so far as your industry was concerned.

Much to Hitler's despair we *still* have the greatest petroleum resources of any country in the world; and to his increasing dismay he knows that enough natural gas is available in the underground reservoirs to do the job of lifting to the surface the oil that will ultimately blow him and all his stooges in—well, I won't name the place; you can fill it in for yourselves.

Looking back over the road that we have traveled, which at times has been quite rocky and which frequently has meandered through uncharted lands, I am frankly amazed at, but grateful for, the things which have been learned and the things which have been done. Without that knowledge and without those accomplishments, the winning of this war would be made immeasurably more difficult. This is the same as saying that without petroleum, and without natural gas, we could not win this war within the time which it will now take us. Certainly, we could not win it as it is to be won if we still had to depend upon the gas and oil production practices which were customary during the decade which followed the first world war.

Wasteful Practice Curtailed

If there be anyone who doubts this statement, let him look at the Cotton Valley field here in the State of Louisiana. In 1924, when this field was being developed, oil was discharged into earthen reservoirs, with no attempt either to restrict it or to conserve the enormous quantities of gas produced. In some instances, wells with a daily initial open-flow capacity of as high as 50 million cubic feet were blown into the air for weeks in the hope that the gas wells might turn into oil wells. At times, the atmosphere in the low wooded areas was dense with gas vapors and oil spray.

Such wasteful practices could not help to win a war which depends so much upon petroleum for victory. Today, deeper zones are being produced in the Cotton Valley field. The gas is not being wasted. It is being pumped back underground to aid further in the recovery of oil. The owners of the land and the operators in that field have pooled their interests, big and little alike, to assure the efficient production of gas and oil. That is the kind

Address delivered before A. G. A. Natural Gas Section Convention, New Orleans, La., May 6, 1942.

of cooperation that counts; that is what is becoming more and more the American way. And yet, it really is amazing that we could have learned so much in so short a time. There was a brief period of only 15 years between the worst and the best, between practices which would have delayed the winning of a war and those which will win this war in a minimum of time.

Winning this war is not the job of any one or of a few of us; it is a job to which every last one of us must apply himself to the utmost. In our common task, we must forget that state lines exist; that there are corporate entities in the gas and oil business. The pilots over Australia, the soldiers driving our tanks and combat cars, and the sailors in the boiler rooms of our warships don't care whether the gasoline and fuel oil which they need come from the Mid-Continent or the Gulf Coast or whether they were produced by this company or by that. They want the *oil*; they want the right *kind* at the right *places* at the right *time*. It is our job to see that they get it. *This job we will not shirk.*

"It is my sincere belief that only through the cooperation of government and industry, carried out in good faith and mutual trust, will we be able to achieve the smooth action that results from coordination and that is required for winning the war."

Our principal gas and oil reserves are in the Gulf Coast States; our large oil refineries are located at water terminals on the Gulf Coast and on the East Coast. These two regions, in fact, comprise a single area, with the Gulf Coast the producer and the East Coast the principal consumer. In times of peace, communication between them was maintained by a fleet of tankers which operated between Gulf and Atlantic Coast ports with the regularity of a ferryboat service. More than 95 percent of the oil consumed along the East Coast was brought in by tankers. Our tanker fleet was entirely adequate for this peacetime service but now we do not have enough tankers to meet all of the wartime requirements. And so new problems have arisen.

Just about a year ago the owners of American tankers were called upon to assign a substantial part of their tonnage for services which were necessary to rebuild to a satisfactory level the oil stocks in the United Kingdom. A second call followed soon thereafter. The removal of these tankers from our own coast service resulted in such a shortage in our transportation facilities that the need for unified action within the oil industry became essential in order that the war needs for oil might be met. Accordingly, the Office of Petroleum Coordinator for National Defense was established by a letter of the President dated May 28, 1941. Now the name has become, more appropriately, Petroleum Coordinator for War.

Coordination for War

In about three weeks the Petroleum Coordinator's Office will have completed the first year of its work in coordinating the activities of the gas and oil industries of the United States. The first period of our operations, extending to the treacherous attack upon Pearl Harbor by Hitler's murderous little brown Nordics, saw many drastic moves that were necessary to coordinate the petroleum industry for emergency action. On December 8, 1941, the Petroleum Industry Council for National Defense, later called the Petroleum Industry War Council, heard, by radio, the President's address to the Congress and proceeded to make immediate plans to go forward on a war basis.

The East Coast oil industry is now organized to operate as a unit in meeting the essential petroleum needs of that area and it is doing a magnificent job in developing every available means of moving oil overland and by inland waterways. It is no simple matter to change, on short notice, transportation methods which have been years in developing and substitute therefor difficult and costly transportation by tank car, barge, and pipeline. We feel that it is only prudent, however, to prepare for the day when it may be necessary for us to rely entirely on land and inland water transportation to supply oil to the eastern Seaboard. I believe that the soundest national policy now dictates that we should henceforth operate on the theory that there will be no tankers available for East Coast service. The Army or the Navy may need those tankers elsewhere.

We know that we will be called upon to supply more tankers for the war work of the United Nations, including our own, in all parts of the world. And when the call comes, we will not fail our Allies or our own armed forces. Besides, we feel that the heroic seamen who man our tankers should not be asked to run the risk of losing their lives, as so many of them have done, in order to bring oil to the East Coast for nonessential uses or even for essential uses, if there is some other way of getting the oil there. Certainly, the life of any sailor is too precious to be sacrificed in order that some safe compatriot may be able to drive to his golf club or go on a fishing trip.

"Oil and natural gas no longer can be measured in terms of barrels and cubic feet alone. In our victory drive, they must be measured in terms of tanks, planes, ships, bullets and bombs."

The railroads and the oil companies, working harmoniously and effectively, have done spectacular things in moving enormous quantities of oil by tank car to the East Coast. That movement now is nine times as large as it was during the week before the attack on Pearl Harbor. When we were called upon last summer for a large number of tankers for the service of our Allies, particularly Great Britain, we insisted that tank cars be used as substitute transportation by the companies supplying the East Coast. I doubt whether even the most optimistic believed that 600,000 barrels of petroleum could be moved each day into the East Coast states by tank car, as we have been doing recently.

To do this, we have not only pressed into service every unused car that was available, we have drawn heavily upon other parts of the country for tank cars *actually in use*. The Middle West and the Southwest have contributed no less than 30,000 tank cars to move oil to

the Eastern Seaboard. The additional cars, plus ingenious and drastic economies of operation, have run up our score to the astounding total that I have mentioned. We hope to make these figures even bigger, but the railroads are definitely near the limit of their oil-carrying capacity.

The gratitude of the entire country, and particularly of the East Coast, is due the oil companies in the Midwest and in the Gulf Coast areas that have cheerfully given up their tank cars, even though it has meant rearranging their transportation facilities, in order to help make up the deficiency in the Atlantic Coast States. And now that the war is getting closer to the Pacific Northwest, these same sources have had to find additional tank cars for the transportation of oil to the states of Oregon and Washington.

We have not relied *exclusively* upon tank cars to supply the Atlantic Coast states. We are taking up old pipelines and are going to re-lay them in such a manner as to shorten the haul to the Eastern Seaboard. Barges are being diverted from their customary runs in order to move more oil up the Mississippi River and thence into the eastern area. More barges and tugs to pull them will be built. We are making many other moves which I cannot explain now, but I do want to say that there are hundreds of men in the oil industry today who are devoting their full time, their training, and experience in order to develop new ways of moving oil northwest and east. Nevertheless, all of these additions, improvements, and efforts may not be enough to make "driving as usual" possible for some time to come, especially along the Atlantic Seaboard.

"In winning the war we do not want to lose the things for which we are fighting or the things which make our fighting possible."

We who live in the East are prepared to do more walking. We are pooling our transportation in order to see that those who work in essential industries will have the means to get to their jobs. We are rearranging our house heating for next winter. Those of us who can change from oil heating to coal heating are cheerfully doing it. We are going to eliminate every nonessential use of petroleum products in order that there will be oil for our battleships and gasoline for our tanks and for our flying fortresses. The paraffin which might have gone into candles for birthday cakes and Christmas trees will waterproof a soldier's tent. Come to think of it, the candles on my birthday cake would waterproof several tents.

Changes of such variety and magnitude cannot be tossed into the placid pool of our national life without setting in motion a whole series of widening ripples. The oil which we cannot move to the East Coast may pile up in your Gulf Coast refineries. As the tanks fill up, it becomes necessary to curtail refinery runs or to pour refined products back into the ground. As refinery runs are curtailed, it becomes necessary to restrict further the production of crude oil. As crude oil production is curtailed, the income of the crude oil producer is lowered. That makes for problems with the banker and the merchant and affects all phases of our economic life—mine as well as yours. But all adjustments must be made with an eye fixed upon war requirements, everything must be sacrificed to the united resolve of the American people to win the war.

Post-War Planning

We must not only think of our immediate war requirements; we must also plan and conduct our operations so as to provide a sufficient supply for an indefinitely long period into the future. It is because of the conservation that we have practiced in peacetime that we now have sufficient reserves of precious war resources. We must continue our conservation practices in order to have sufficient reserves to meet the post-war problems of reconstruction. In winning the war we do not want to exhaust our valuable and irreplaceable oil and gas reserves, unless it is literally a matter of liberty or slavery, of life or death. In winning the war we do not want to lose the things for which we are fighting or the things which make our fighting possible, although if need be, we will, of course, willingly pour out every drop of blood and exhaust every resource to preserve ourselves from the fangs of the werewolf, the hyena, and the jackal. In winning the war we do not want to lose the things for which we are fighting or the things which make our fighting possible.

In some quarters there seems to be an unjustified feeling that state laws and the functioning of state regulatory bodies are no longer necessary or important on the ground that the Federal Government has taken over full control of the gas and oil business. I can assure you that there is no basis for such a point of view. It has been necessary to impose, for the period of the war, a certain amount of Federal regulation of the oil and gas industries just as it has been necessary to regulate other essential industries. However, close integration of the full efforts of all parties concerned will be required if the gas and oil industries are to meet successfully the challenge of this war.

"In some quarters there seems to be an unjustified feeling that state laws and the functioning of state regulatory bodies are no longer necessary or important on the ground that the Federal government has taken over control of the gas and oil business. I can assure you that there is no basis for such a point of view."

The War Production Board has issued, upon my recommendation, orders that are designed to achieve the desired conservation of our oil and gas resources, and I am glad that the oil and gas industries have complied willingly and wholeheartedly. Recommendations to individual units in the gas and oil industries, as well as to interested state regulatory bodies, designed to assure that these exhaustible natural resources will be developed in the most efficient manner have been accepted cheerfully and voluntarily. In no instance has any state been *ordered* to do thus and so. We have indicated what the national program requires of each state, leaving it to the states themselves to work out their own problems of how best to do their part in meeting the national requirements.

But the states must have effective

laws, properly administered, for speedy and decisive results, if we are to continue to rely solely upon their voluntary cooperation. It would be highly desirable if each state adopted, where necessary, or revised and strengthened its gas and oil conservation laws. A record of successful administration during the war will demonstrate fully that a state is able to regulate and control its petroleum operations.

On many occasions, I have told the Petroleum Industry War Council and other groups that it is the responsibility of the industry to solve the problems created by the war with as little assistance from the Federal Government as possible. The industry must devote its talents and its energies to war production. The Government must provide the industry with the plan and direction by which the talents and energies of the industry can be guided.

"It will be the duty of the natural gas industry to recognize immediately the necessity of assuming the additional war-time load which has been placed upon its shoulders and adjusting its operations accordingly."

As Petroleum Coordinator, I have attempted, through the medium of industry advisory committees, to achieve cooperation between the Government and the petroleum industry. I have selected the personnel of these committees from the nominations which those in the industry themselves have made. It is my sincere belief that only through the cooperation of Government and industry, carried out in good faith and with mutual trust, will we be able to achieve the smooth action that results from coordination and that is required for the winning of the war. That my confidence that this was an attainable objective was not misplaced is proved by the conscientious and intelligent work that is being done by the industry committees and representatives of the Government.

In peacetime, the natural gas industry has provided fuel for domestic heating, cooking, hot-water heating, and refrigeration. It has also sold large volumes of natural gas to industrial consumers. In wartime, natural gas assumes an added importance, particularly when it is used in those industrial enterprises which are making the materials that are necessary for our fighting forces.

To meet the new situation and to recognize the importance of natural gas and natural gasoline in the war, we are creating a Natural Gas and Natural Gasoline Division which will function in the same manner as and on the same level with the other operating divisions in our Office. The Natural Gas and Natural Gasoline Division will occupy a position parallel with the Production Division, Refining Division, Transportation Division, and Marketing Division of the Petroleum Coordinator's office.

Use Natural Gas Wisely

We may assume that all efforts will be made by the natural gas industry and by governmental agencies to continue the supply of natural gas for ordinary domestic purposes. The industry must, however, review its operations for the purpose of seeing to it that the strategic war industries using natural gas will be certain of a constant supply. This is a job primarily for the industry, but it also concerns governmental agencies and the public. The public can best aid in the solution of this problem by a wise use of natural gas. Governmental agencies can do their part by maintaining a constant and alert survey of the demands for natural gas and by assisting the industry in doing the things that need to be done. It will be the duty of the industry to recognize immediately the necessity of assuming the additional war-time load which has been placed upon its shoulders and adjusting its operations accordingly.

At my request, representatives of the natural gas and natural gasoline industries have completed recently an illuminating survey of possibilities for the manufacture of the components of 100-octane gasoline, toluene, and synthetic rubber. An ample supply of these essential war products may prove to be the margin that will mean victory more quickly for the United Nations. Steps will be taken to assure the full utilization of the resources of these industries making these products in the production of these vital war materials.

All of us—Government, industry, and the consuming public—realize that oil and natural gas no longer can be measured in terms of barrels or cubic feet alone. We understand that natural gas and oil in our victory drive must be measured in terms of tanks, planes, ships, bullets, and bombs. The waste of a gallon of gasoline or the nonessential use of a cubic foot of natural gas means a proportionate waste of tanks, planes, ships, bullets, and bombs, either in their manufacture or in their use as instruments of victory.

I like to think that I can talk to any group of men in the petroleum industry without having to deny that I have been bumped in in a Trojan horse to take the citadel. I do not want to question the intelligence of those who, innocently, or impugn the motives of those who, not so innocently, used to spread abroad the suggestion that I wanted to run the oil industry. If there still be those who so believe, let them get what pleasure they can out of their cud of suspicion. I am sure that an overwhelming number of men in the industry believe as implicitly as I do that the Office of Petroleum Co-

"The waste of a gallon of gasoline or the nonessential use of a cubic foot of natural gas means a proportionate waste of tanks, planes, ships, bullets and bombs, either in their manufacture or in their use as instruments of victory."

ordinator is an agency that was created to meet an emergency and that it will be discontinued when the emergency ends.

We are faced with a great and patriotic task. We have an opportunity to achieve something for which those who will come after us will revere us as we honor those who endured under Washington or fought here at New Orleans under Jackson. Not everybody, to be sure, can march in the ranks, even if age and physical ability were on their side. But we are learning more vividly every day that wars cannot be won by soldiers alone, however many and brave they may be. War, as we know it today, is a battle of the

(Continued on page 248)

Gas Production . . . *Engineers Face Problem of Meeting Wartime Demand*

By Major Alexander Forward
Managing Director, American Gas Association

Major Forward

NOTHING could better illustrate the profound changes war brings to the life of every individual and every business enterprise than the gas production situation today compared with any of the former years when I have had the pleasure of giving you the greetings of the American Gas Association. Indeed we need go back no farther than twelve months for a comparison.

For years we have been cultivating new fields for the use of our product in homes, commerce and industry, the assumption being that we could easily supply whatever demand we were able to create with the possible exception of a few peak days in extreme cold weather.

What War Has Done

Now see what the war has done. The sale and installation of appliances, except in war industries and for defense housing, has been to all intents and purposes suspended for the emergency. Even if appliances could still be sold and installed most of our companies would find difficulty in supplying the gas to service them.

Look at the natural gas industry for a moment. We have proceeded on the assumption that the supply of natural gas in the ground was adequate to fill all demands and that in some sections the reserves are almost unlimited, so that it is being distributed a thousand miles and more from the producing well. War conditions resulted in limitation orders prohibiting new classes of customers for natural gas and sharply limiting the drilling of new wells to maintain the supply. In those areas where natural gas is still plentiful, and all demands can be supplied, transportation facilities are being taxed and the ingenuity of natural gas executives and engineers has been brought into full play to maintain war industries, army air camps and essential civilian uses.

Fuel Limitation

If one year ago at your Conference some one of us had predicted that on May 25, 1942 we would be close to a limitation order on the sale of manufactured gas it would have been regarded as the joke of the Conference. Yet we are right at that point. Many of our manufactured gas companies have already reached the limit of their capacity. War Production Board officials have told us with unmistakable emphasis that manufactured gas companies will not be permitted to take on business to the limits of their capacity and then be supplied through priorities with gas making machinery and equipment to extend their business further. It is all we can do, in light of the current shortage of critical metals, to secure adequate repairs to our existing machinery. Some companies have already adopted limitations on customer supplies, in several cases with the approval of their regulatory commissions.

The American Gas Association through its Committee on War Activities is now discussing with the War Production Board a permissive limitation order for manufactured gas companies effective upon certification by a company that it needs the order.

Aside from plant capacity, we are faced with transportation difficulties in our supplies of raw materials, coal and oil. When, in June 1941, it was announced that steps would have to be taken to limit the consumption of fuel oil, President Strickler and I went to Washington and filed in person with the Petroleum Coordinator for National Defense a statement showing the needs of the industry for oil in the production of water gas. Later we filed an estimate of requirements by companies. We were assured our problems were understood and the essential nature of our business recognized.

In February of this year when the transportation situation became more acute due to enemy attacks on shipping, and the progress of the war effort, we established connection with the Petroleum Marketing Committee for District Number One comprising the Atlantic Seaboard States and West Virginia. The chairman of the Marketing Committee, L. H. Spiner, an old utility man, did not need to be converted to the essential nature of our needs but assured us a supply of oil along with the war industries. All of our companies have subsequently received all the oil they needed. We are, however, getting from the Petroleum Coordinator's and the Marketing Committee's offices growing demands for such conservation methods as will save all the oil possible in the national crisis.

Transportation Problem

Coal gas companies are having their problems, too, particularly in some areas. The railroads seem to be doing a magnificent job in the transportation of all commodities and especially in oil and coal. There is a limit, however, to their ultimate capacity. All the advice I have secured from engineers who know what they are talking about is to the effect that coal and oil supply in the manufacture of water gas constitute an indivisible unit in that the more oil used the less coal will be required.

It is obvious that under these cir-

Presented at Joint Production and Chemical Conference, New York, May 25-26, 1942.

cumstances the industry must do all that it can to cooperate in raw fuel conservation. We shall probably soon have the legal as well as the moral support of the War Production Board in the thankless task of curtailing or suspending the supply of gas to some of our customers. We can do no less. It has already been announced that many domestic oil heating customers will go cold in the winter of 1942-1943, unless there should be sudden and happy, though unexpected, termination of the war by that time.

All I have said illustrates the greatly altered position of gas production engineers. For the most part they are at their wits end in grappling with these problems and trying to produce enough gas to supply the demand of these critical times. But they have the knowledge, the experience and the resourcefulness and they will do the job.

Drip Truck Does Double Duty as Mobile Fire-Fighting Unit

A MOBILE fire-fighting unit, which carries its own water supply and could be used to fight incendiary bombs, oil fires, gas main blazes or brush fires, designed from equipment already in service for other duties has been put into operation recently by engineers of the Western Division of The Connecticut Light and Power Company.

The idea grew out of an informal discussion between two company engineers on various methods of fire-fighting. The fire engine, if such it may be called, does not lie idle when there is no use for it as a fire engine—for in reality it is a drip truck which has been converted for possible use as auxiliary fire equipment in case of necessity.

The operation of a drip truck for removing condensates from gas mains is common knowledge among gas engineers, so it is not necessary to go into detail here. Briefly, when the truck is in normal operation, a pump attached to a metal hose connected to a drip riser sucks condensates into the drip tank on the truck, if the main is a low pressure one. The condensates flow through a glass "tower" on the hose line so that the pump operator can tell when the main is properly emptied.

For fire fighting, the process is simply reversed and the pump is used to force water from the drip tank into a hose and nozzle. Additional piping and valves are necessary, of course, to make the apparatus work correctly, and a tee has been installed so that the water passes through a safety valve before it reaches the nozzle. The valve is set at 60 to 80 pounds, and the piping allows all water over 80 pounds pressure to flow back into supply tank, which has a capacity of 350 gallons.

The tank is filled with water through an opening in the top and the first time it is used for fire fighting, instructions have been issued to overflow the tank so that any excess drip oil will be floated out.

Used as a fire-fighting unit, the truck is capable of sending a sizeable stream of water a considerable distance. A fog nozzle attachment can be used for a fine spray of the kind recommended for use against incendiary bombs and in extinguishing gas main fires. Because it carries its own water supply, the truck can be used to fight brush fires in outlying territories where a sufficient supply of water is not readily available. Waterbury engineers are conducting further tests to determine other possible uses.

There was one thing about the drip truck which did not have to be changed when the engineers decided to make an auxiliary fire engine out of it—it was already painted a bright red!

Meat Shrinkage Not Affected by Fuel

THERE is no substantial difference in shrinkage of meat when cooked by gas as compared with electricity, according to the results of an independent investigation at the University of Chicago, reported by Letitia Ayers in the *News Bulletin* of the School of Business, May 5. In an article describing the yield of certain wholesale cuts of beef roasted by these two fuels, Miss Ayers concluded that "the fuel used for roasting had little effect on the number of servings obtained and therefore little effect on the number of pounds to be bought to yield one hundred servings of 3 ounces each."

Five experimental cookings each of wholesale cuts of sirloin butt, rib end, bottom round, and rib were made by gas and electricity to obtain an accurate comparison. The average shrinkage of beef cuts roasted by gas and by electricity were cited as follows:

Cut	*Internal Temperature (° F.)*	*Per Cent of Shrinkage by*	
		Gas	*Electricity*
Sirloin butt	170	32.31	31.55
Rib end	160	23.36	24.46
Top round	160	24.77	25.92
Bottom round	160	25.23	26.96
Rib	150	20.66	22.79

A previous investigation brought out that cooking losses are increased by high oven temperature, by the degree of "doneness," and by a low initial temperature of the meat.

G. E. Keenen Dies

GEORGE E. KEENEN, vice-president, Cribben & Sexton Company, Chicago, and president, G. E. Keenen Company, Bayonne, N. J., died May 14. He was 56 years of age.

Mr. Keenen was widely known in the gas appliance business. A former New Jersey State Athletic Commissioner, he was prominent in Bayonne civic affairs.

The drip truck in action as a mobile fire-fighting unit. Note the effective spray which could be concentrated on any affected area

30 Months of War . . . *Their Effect on Canadian Gas Company Operation*

By CHARLES M. SIEGER

Controller of Gas, United Gas & Fuel Co., Hamilton, Ontario

THE first, and most startling fact that strikes us in a discussion of the affect of the war on our gas company is that our industrial sales in 1941 were 400% of our pre-war sales.

We are now being asked to increase our industrial sales to such an extent that by the beginning of 1943 our industrial sales will be 900% of our average pre-war sales. As our industrial pre-war sales were approximately 40% of our total sales, it is quite evident that our problem has been a serious one.

Generally, the problems of the various gas companies in Canada have not been so great, but we, in Hamilton, Ontario, have a problem which sooner or later will be shared by several industrial cities. I refer to this load to give you an idea of "things to come."

Plant Capacity Increased

Almost immediately, in the fall of 1939, our load increased and in 1940 we made a considerable addition to our plant capacity. At the same time, also, we requested people to remove their conversion house heating burners. We divided our industrial load into war and non-war load, and arranged that in an emergency, we could shut off non-war industrial load, to take care of our essential war load. This was a difficult thing to do, since most industries were on a 50% war basis, and the difficulty is obvious.

The response from non-war industries in the emergency was encouraging, and in few instances were there any complaints.

During the first winter, also, the Government put a 25% tax on all domestic equipment, and this increase in price (on which we were allowed no markup) tended to slow up domestic sales.

During the summer of '41, we again increased our plant capacity considerably, and in a short time this, again, was overloaded.

We are now faced with a still greater industrial load in 1943 and again we must find the gas.

To reduce appliance sales, the government resorted to several methods and among these was the reduction of installment contracts to one year, increasing down payments to 33⅓%, and then demanding a differential in cash and time prices of at least 9% per annum. Moreover, time and cash prices were frozen so that in effect, if carrying charges were on a 6% basis, the cash price was lowered.

In January, 1942, an extreme cold spell forced us (notwithstanding our increased facilities) to shut down some few war industries and the government then took drastic steps to curtail and practically stop the sales of all gas appliances.

New Business Restricted

An order from the government forbade us to run any new mains, install any new services, or add any new appliances of any sort, and even forbade any replacements except by permit from the Power Controller of Canada.

The order, in effect, demanded a government permit for any and all installations. In the case of a replacement of an old range by a new range, the permit is generally granted. A change from a coil heater to a storage heater (an appliance using more gas) is disallowed. A change from a 3-burner range to a 4-burner range is disallowed. To make sure that no new load was added, all trade-in equipment sold by gas companies or dealers had to be brought in to the gas company shop and destroyed. This last order was recently changed, due to the alarming shortage of new appliances.

The sale of *all* commercial appliances has long since been stopped. No new restaurant starting in business can get gas appliances, or in many cases, electric appliances, so that they must make other arrangements for counter appliances, etc. The order, incidentally, has been a distinct deterrent to the opening of new commercial establishments.

As to industrials, war and otherwise, a permit must be obtained from the government before any equipment is ordered. We have had numerous occasions where factories bought small furnaces or water heaters for a new or enlarged wash room, only to have the permit turned down.

Character of Load Important

With a threatened oil shortage, and with ordnance departments demanding more and more accurate temperature and atmosphere control, our advice to gas companies in industrial areas is to choose their loads carefully. We needed load, and we worked for it, but unfortunately the load never stopped coming. On a contract basis, on which much war material is made, watch the character of your load.

You will find that gas does the job generally so much better than other fuels that the munitions department, checking up on rejects, will pick the furnace showing the best results, and duplicate the order in all localities. A gas furnace may be put on your lines because at some far distant point, gas did a better job.

It is a very difficult task to get new gas-producing, or gas-carrying equipment, and once the war-time over-load comes on, needless to say, something else on our lines must come off, to carry on the war.

With the power shortage, coupled with an oil shortage, truly the gas companies have, in Canada, a tremendous load to bear.

Excerpts from paper presented at Natural Gas Section Convention, New Orleans, May 4-7, 1942.

Increasing Capacity... *in Water Gas Sets with Thin-Walled Generator Lining*

By R. J. HORN

Central Hudson Gas & Electric Corporation, Poughkeepsie, N. Y.

WHERE increased capacity of water gas plants is important and construction materials are scarce, attention is naturally invited to possibilities of capacity increase in existing water gas generators. The inside diameter of the generator largely determines the capacity of the set, provided an ample supply of air is available and other facilities are adequate.

To increase the inside diameter of generators, thin silicon carbide linings have been used in some sets by the Central Hudson Gas & Electric Corporation since 1938. By this means, the area of the fuel bed section of generators formerly lined with clay has been increased with greater than proportionate increase in the capacity of the sets. Four generators on this property ranging in size from 7'-6" to 11'-0", lined with thin walls, are giving complete satisfaction. An 8'-0" generator with thin-walled silicon carbide lining is giving a capacity of 112 M. cu.ft. per hour, which is 40% above the manufacturer's normal rating for this sized machine.

Thin linings are particularly applicable in standby plants and in sets operated for peak loads where additional marginal capacity is important. Under these conditions, the inside diameter may be increased six inches or even more with silicon carbide inner face walls.

In some sets the generator capacity resulting from thin walls may exceed the carburetting capacity of the set. Oil introduced into the generator will give additional total carburetting capacity and bring the generator capacity and the carburetting capacity of the set into balance.

Several types of walls have been used by Central Hudson as Figures I,

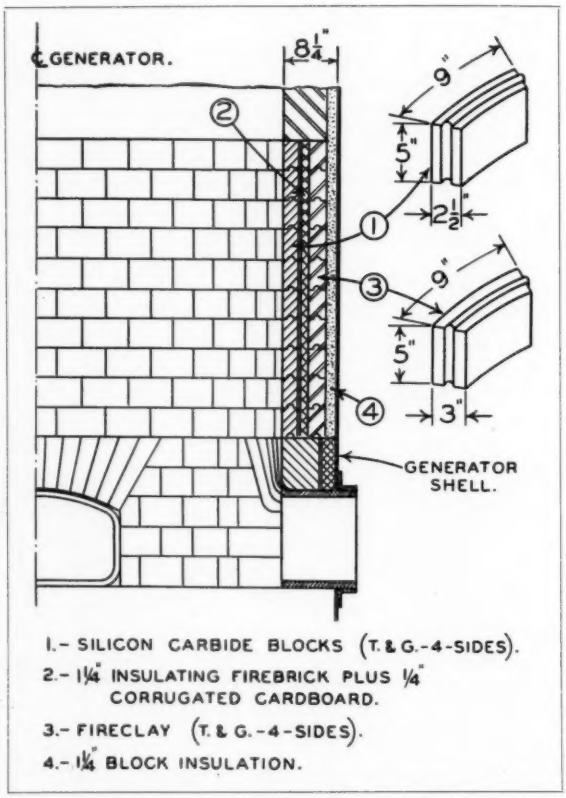


Figure I. Tongued and grooved silicon carbide blocks used with tongued and grooved clay bricks and insulating firebrick splits in thin wall of water gas generator

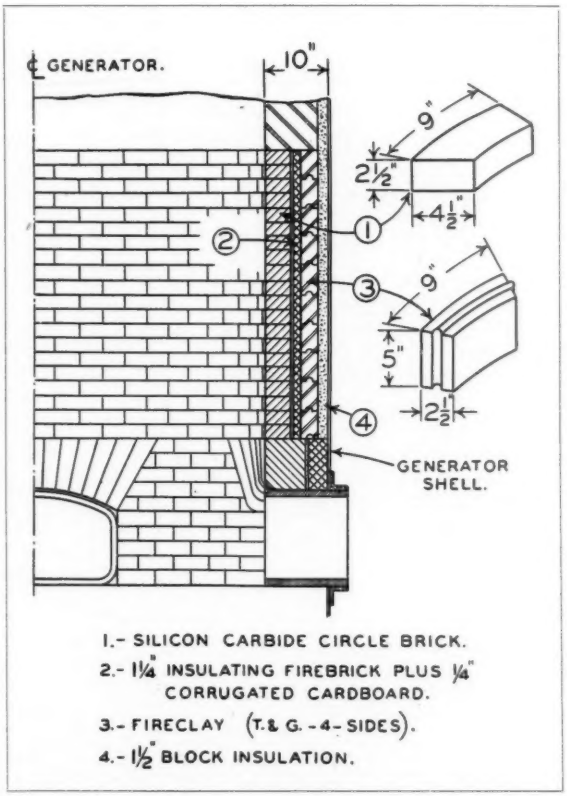


Figure II. Standard silicon carbide blocks used with tongued and grooved clay bricks and insulating firebrick splits in thin wall of water gas generator

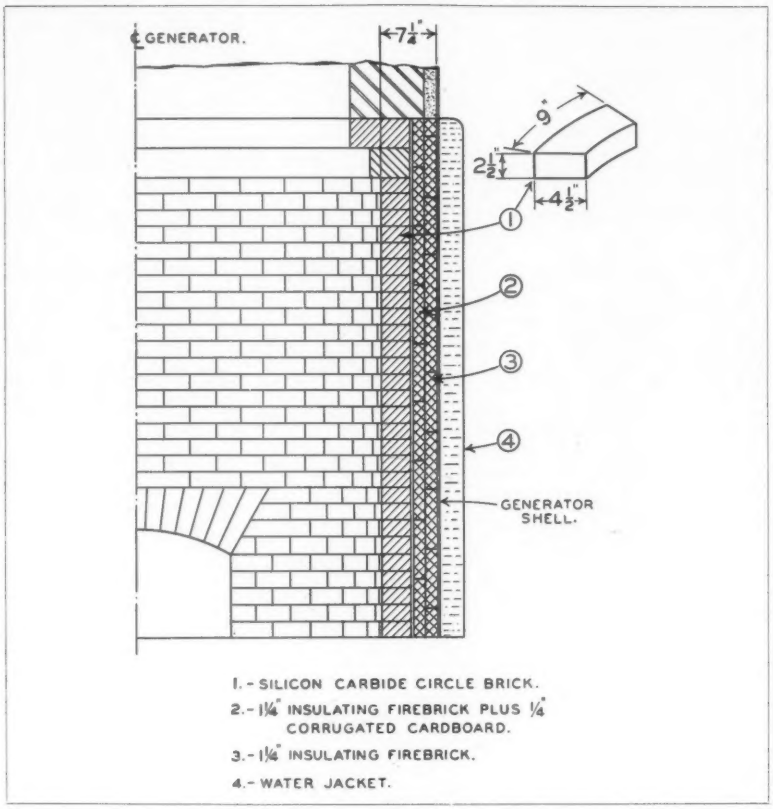


Figure III. Standard silicon carbide brick used with insulating firebrick splits and water jacket in thin wall of water gas generator

II, and III illustrate. In all types the inner face walls have been of silicon carbide. Insulating firebrick material of light weight and low thermal conductivity used behind silicon carbide in the wall construction minimizes the heat losses through the wall. Experience shows that the type of construction illustrated by Figures I and II gives no readily detectable increase in shell temperature over that prevailing with standard full thickness 12" linings.

The silicon carbide wall may be of standard circle brick or special shapes tongue and grooved both ways. With standard silicon carbide circle brick occupying 4½" of the wall thickness, all the reduction must be had in the other wall materials; whereas with only 2½" or 3" of the wall occupied with tongued and grooved silicon carbide blocks there is more possibility of increased generator cross-section without risk of increasing the shell temperatures.

Water jackets are a possibility with walls which transmit too much heat. Figure III shows the use of a water jacket on the generator shell. Chemically treated cold water is preheated in the jacket and piped to the boiler feed pump. A temperature rise of 50° F. in the jacket water was observed with this type of operation. To spill this water would be wasteful and if the heat in it cannot be utilized, this type of construction generally would be uneconomical.

Thin linings appear to have a life expectancy well beyond that necessary to justify their cost. One generator with 2½" thick silicon carbide has had 1,740 operating hours and has been on standby service with an active fire for an additional 2,000 hours. The face of these blocks shows little erosion and there is no evidence of clinker adhesion having torn away any of the wall. Thin walls in intermittent use at a standby plant have been in service for four years, with the apparent result that not over 20% or 25% of the life of the lining has been spent.

There are sufficient advantages in thin-walled generator linings to justify its careful study where greater capacity is urgent. Experience has proven the practicability of this type of lining.

Recovering Solder from Old Meters

DEVELOPMENT of a method of recovering solder from condemned meter skeletons and discarded diaphragm rings which may prove an important contribution to the nation's war economy, has been announced by The Brooklyn Union Gas Company. Developed by George E. Griffin, Jr. and Joseph Jares, the technique has produced encouraging results in experimental operations.

The method consists of immersing the meter skeletons and discarded diaphragm rings in a bath of tempering oil, heated to 550° F. At this temperature the solder quickly melts and falls to the bottom of the tank. The meter parts remain in a wire basket. Some of the parts are then salvaged and the rest sold as junk. At the end of the day the oil is allowed to cool and as it does so, the solder solidifies in the bottom of the tank and is then lifted out, reheated, mixed with enough additional lead to reduce the tin content to 40°, and then poured into bars for the meter repair men.

In experimental operation up to two pounds of solder has been recovered from the average five-light meter skeleton. About four pounds of solder was recovered from 300 discarded diaphraghm rings.

Gas Rationing Abroad

FOLLOWING recent reports of gas rationing in England, comes information concerning such rationing in other foreign countries. *The Gas World*, London, March 14, reports that gas rationing is the latest restriction in Holland. Gas will be cut off entirely between 3 and 5 P.M. and from 9 P.M. until 6 A.M. The Municipal Gas Works in Prague has cut off gas between 2 P.M. and 6 P.M. The Helsinki Gas Company has announced that gas will be cut off between 1 P.M. and 4 P.M. and, if necessary, between 7 P.M. and 9 P.M.

The Municipal Lighting Board of Copenhagen has decided to prohibit the use of gas for heating rooms in private houses, and the use of gas ovens in private households.

Rationing Postponed

THE roundly criticized coupon rationing for fuel in England, which was planned to go into effect June 1, was postponed indefinitely according to London reports dated May 13.

Servicing Trends . . . *An Analysis of Factors Affecting Company Policies*

THE subject of "Trends in Appliance Servicing" is one that bears scrutiny from time to time. It cannot be static, and because of its complexity, it must change to meet varying or unusual conditions.

The subject was studied in 1939 and a comprehensive report submitted by the Appliance Servicing Committee for that year.* The report showed quite clearly the trends at that time and was based on attitudes evidence then and as far back as 1934. At the organization meeting of this year's Committee it was decided to restudy the subject. There were many reasons for this restudy and some of the thoughts brought out in discussion are mentioned as follows:

The rapid change in the design of appliances, notably the CP range.
Streamlining of appliances for sales appeal causing more difficulty from a standpoint of servicing and accessibility.
The inclusion of the sales slant on the servicing problem.
The desire to obtain higher efficiencies through better combustion.

The emergency due to changed world conditions.
Total amount of service required will increase as a result of ageing of present equipment, especially if no replacements are available.
If salesmen are used on surveys and service work during the emergency, service costs may increase.

Proper investigation of the elements causing the cost of service and an analysis of this investigation. It will be very beneficial in formulating and keeping up-to-date servicing policies.
The importance of bringing to management's attention increased costs due to the adoption of certain policies.
All servicing policies should be clear-cut and thereby understandable by all concerned.

The problem of the small dealer going out of business due to lack of merchandise and manpower.
This situation may also be faced by the large merchandiser who no longer has merchandise to sell.

- **This article reports in the main on trends occurring in appliance servicing practices and policies prior to January 1, 1942, and does not purport to represent changes in servicing practices as a result of wartime conditions. Another committee is studying this subject and will report subsequently.**
- **The material presented here reflects the policies and practices of the 14 companies represented on the Sales & Service Relations Committee, which include manufactured and natural gas companies operating in the principal geographic regions of the United States, and taken as a group are quite representative of the industry as a whole.**

By J. M. McCaleb[1]

Chairman, Sales and Service Relations Committee

and

D. R. Edwards[2]

Chairman, Subcommittee on Trends in Appliance Servicing

If suggestions or discussion on these ideas could be collected it was felt that it would supplement the 1939 report and be of value to the industry in general.

A questionnaire was prepared and sent to all members of the Sales and Service Relations Committee and the results obtained were most gratifying. The answers represented opinions expressed by straight gas companies distributing natural, mixed and manufactured gas, and combination companies.

No attempt will be made to offer tabulations of the results of the questionnaire inasmuch as the questions asked were not those that could be answered with "yes" and "no" answers. This report will attempt to interpret the findings of the questionnaire and record the trends expressed in those findings.

The paramount thing in the minds of the companies queried seemed to be one of increased servicing costs. Not all companies agree as to the causes of this increase. All recognize that the problem is before us but cannot agree on the reasons. Some companies feel that it is because of:

a. The failure of the accessories or "gadgets" on the equipment.
b. The failure of proper instruction to the customer when they receive the new appliance.
c. Lack of proper training of service men.
d. Actual distribution troubles from the standpoint of impurities in the gas and poor pressure conditions.
e. Careless promises made by salesmen because of lack of understanding between Sales and Service Departments.
f. Increased time required to service modern streamlined appliances.

These of course, are only some of the major points, but they well illustrate the fact that most companies do not actually know why service costs are increasing and until they do know, it is almost impossible to do much about it. Due to the difference in companies as to location, structure, size and method of operation, no general suggestion is offered as to the method to use in determining the reason for the increase, but it can be definitely said that this must be determined accurately before policies are decided. If for instance it is determined that costs are increased because of distribution troubles, then a decision should be made either to accept the increased cost or correct the system. If it is found that the increased costs are occasioned by an extremely liberal service policy, this should be recognized by the management and taken into consideration

[1] Citizens Gas and Coke Utility, Indianapolis, Ind.

[2] Ohio Fuel Gas Co., Columbus, Ohio.

* Recent trends in appliance servicing policies, Interim Bulletin No. 48, Commercial Section A. G. A. 1939.

when dealing with the service problem. If it is found to be failure of the equipment, accessories, or inaccessibility due to design, this should be taken up with the manufacturer and corrected, or the increased cost of service recognized.

Usually the increased cost of service cannot be confined to any one of the above mentioned items. It may include several, and when that condition arises, the problem becomes more complex, but under any circumstance, it must be thoroughly analyzed and recognized by management so as to effect a satisfactory answer and a determination of just how far the increase may be permitted to go.

Increase in Labor Rates

No mention has heretofore been made of the increase in labor rates. It is felt that this is a universal condition and will be recognized as such, however, one company did report that they were able to offset, partially, wage increases by intensified training schools for their service men.

Even though only one company reported a trend in this direction, it seemed a very significant observation and should merit much study. Most companies do have some type of training program either intermittent or continuous. There has been much written on employee training but it might be well to take stock from time to time to see if the training program can be improved.

The industry is definitely faced with unusual conditions during the present emergency, and the questionnaire attempted to determine some of the trends due to this condition. The results were not complete on this score, however, information can be given on some things. Several companies reported increased service costs due to the use of substitutes and inferior materials. This must be recognized as a temporary condition and should be handled individually by each company. It was the opinion of several companies that if salesmen are used, either in service departments or in making field surveys, service costs will undoubtedly increase, but it may be worth the increase to keep the sales groups intact. The questionnaire definitely indicated that if small businesses are forced out of existence because of lack of merchandise and manpower, more servicing effort will be required from the utilities. There is also the possibility of large merchandising organizations being eliminated because of the lack of merchandise. This also may add to the servicing expense.

It is also very probable to expect greater demands on service departments because of the lack of replacement merchandise and the necessity of keeping older equipment in repair. Mention should be made at this point of the retrenchment in the use of all automotive equipment used in handling sales and service. It is necessary to curtail many activities and no doubt will have much bearing on the extent of service rendered; that is, the amount of "right now" service. It should be repeated that these are temporary conditions and should not be confused with the long range picture of appliance servicing.

Charging for Service

Probably the most evident changes in appliance servicing policies, as shown by the questionnaire, are the increased trends toward charging for service and the elimination of certain services. Numerous companies reported changes in their policies in regard to charging for free service. Practically all were charging for some work heretofore given free and some were deleting certain services, particularly in house heating and commercial application. This is directly occasioned because of the paramount problem of increased cost of service. A word of warning should be injected at this point. It is not wise to charge for service as a "cure all" for increased servicing costs. As mentioned before, a complete analysis should be made of the factors contributing to the cost of service and then if it is deemed advisable, charges should be considered. It is not possible to record all of the changes in this report but because of the trend toward more charges, it was decided to include the experience of one large Midwestern Company distributing natural gas and operating several hundred distribution plants from large cities to small towns. Bear in mind, even though this case represents actual operation of one company, competition, rates, and cost of fuel should decide the schedule of charges and the amount of free service rendered.

This company reports that by the end of 1940, because of a rather liberal free service policy, free service expense had passed the one hundred thousand dollar mark and it was thought necesary to take steps to reduce this figure. A complete analysis of this expense was made and it was decided to adopt a policy of charging for service.

"In considering such a program there were two questions involved.* For instance, how far could we go in off-setting a portion of our increased service expense by charging the customer for Labor and Replacement Parts on appliances out of the warranty? Should we attempt to off-set our increasing expense by eliminating our 15 minute free service policy and make a charge for all appliance servicing calls? In answer to the last question it was the opinion that a charge for minor service calls would bring about the loss of good will, dissatisfaction with the appliance, and possibly dangerous or hazardous operating conditions. This would naturally result in the loss of revenue and would furnish inroads for competition.

"We have always been of the opinion that a 15-minute free service policy on the adjustment of burners for combustion, checking house lines for leakage, or furnishing an adequate pressure and supply of gas, was a sound policy if not abused. Our only alternative then was to charge the customer for all labor and material or parts over the 15 minute period.

"To assist the employee in quoting a complete price for labor and material to the customer, we formulated what we termed as our standard price list. It was the intention in establishing these prices to show a very small margin above our actual out of pocket cost. This would naturally show a great saving in our free service account. We have found that by having a standard price list for parts and labor, the contact employee, salesman or other employee, can quote the customer the price of the transaction and avoid a future misunderstanding. On items not listed in our standard prices, or for labor and material, we charged at the rate of $1.00 per hour plus material. We have had no bad reaction from our customers after a year's experience with the policy and we have been able to reduce our free service account approximately twenty-five per cent."

It can readily be seen by the experience of this company that charges for service can be made, service costs can be reduced, and at no sacrifice of customer good will.

Summary

From the responses to the question naire, it is evident that most companies

* Abstract from Company Report.

Simplification of the Cookstove*

Manufacture of domestic cooking appliances and above-the-floor heating stoves for civilian use is restricted after July 31 to simplified, lightweight types, described as follows:

- **Gas Ranges**—Not more than four top burners, one baking oven and one broiler, no storage space or accessories; total weight of metal not over 100 lb.
- **Gas Hot Plate**—Not more than three burners; total weight of metal not over 15 lb.
- **Coal or Wood Range**—One baking oven, no storage space, no warming closet, no accessories; weight of metal per unit limited to 70% of average weight of metal used per unit in year ended June 30, 1941.
- **Combination Range (Gas and Coal or Wood)**—One baking oven, one broiler, no storage space or accessories; total weight of metal not over 350 lb.
- **Kerosene and/or Gasoline Range**—Not more than three top burners, one baking oven, no storage space or accessories; total weight of metal not over 90 lb.
- **Kerosene and/or Gasoline Stove**—Not more than three burners, no storage space or accessories; total weight of metal not over 45 lb.
- **Kerosene and/or Gasoline Table Stove**—Not more than three burners; total weight of metal not over 18 lb.
- **Portable Oven**—No accessories; total weight of metal not over 17 lb.
- **Domestic Heating Stove**—Such above-the-floor heaters are limited to a metal weight per unit of not over 70% of average weight of metal used per unit in year ended June 30, 1941.

No cooking appliances may be equipped with any iron or steel cover tops or lids to cover cooking surfaces when not in use.

- **Banned**—Prohibited accessories include closets, shelves, aprons, clocks, cast broiler pans, thermometers or any other instruments, attachments or appurtenances (except thermostats, reservoirs, water backs, and portable ovens) not essential to top-burner cooking, oven baking, or oven broiling.

After July 31 no manufacturer may produce more than one model of the permitted-type gas range. Manufacturers of the permitted type gas range must comply with the requirements for performance, operation, and construction set forth in the American Emergency Standard Approval Requirements (Z21.ES 1942) issued by the American Gas Association.

* From *Business Week*, May 23, 1942.

are service cost conscious and even though the cost of service is increasing, there are methods whereby these costs can be controlled. By a complete analysis of the cost of service, decisions can be reached as to a method of effecting reductions.

1. Curtailment or elimination of Free Service, especially during the emergency, such as the elimination of house heating summer inspections and commercial periodic inspections.
2. Effect schedule of charges for all appliance servicing out of the warranty period similar to the outlined schedule.
3. Specific educational programs for concentrated training of customer servicing personnel.

All in a Day's Work

THE gas men found the leak they were looking for but not until after an unexpected interruption. A door-to-door check of the suspected apartment building took them to the door of one of the occupants.

"I think I need your help," she told the gas hunters. "I'm waiting any minute for the stork." They rushed her to the hospital four minutes before her son was born. Then they returned to the apartment building—and found the leak, repaired it and went on their way.

Hints for Commercial Kitchen Use

ALMOST prophetic in its anticipation of freezing order L-79 was the work of the American Gas Association Committee on Gas Appliance Installation and Service Manuals in preparing the booklet *"Keep 'Em Cooking,"* which contains suggestions for the proper care and maintenance of gas commercial cooking equipment. Purposely kept inexpensive so that copies might be given to every operator of a commercial eating place and to chefs and kitchen employees as well, the American Gas Association is pleased to offer this booklet at the prices listed below:

1000 copies,	$20.00
500 "	12.50
400 "	10.00
300 "	9.00
200 "	7.00
100 "	4.00
50 "	2.00
Less than 50 "	5¢ each
Single copies	Free

If desired, the booklet can be imprinted with your company name and address, and telephone number, in the space on the bottom of the front cover or on the back cover. The cost for this additional service is $1.00 per thousand copies with a minimum of $1.00 regardless of the number of copies imprinted.

Order Limits Domestic Cooking Appliances

ADOPTING for the first time the principle of "concentration of production," the War Production Board on May 15 ordered an end to the manufacture of domestic cooking appliances by large producers after July 31, and permitting the production of a limited number of simplified and lightweight models by smaller companies for civilian use. It also designates 39 "labor shortage areas" in fifteen states.

The order (L-23-c) covers the entire domestic cooking and heating stove industries, except electric, and establishes three classes of manufacturers: Class A, those having annual sales of $2,000,000 or more; Class B, those having sales less than $2,000,000 but located in labor shortage areas; and Class C, those having annual sales totaling less than $2,000,000.

After July 31, Class A and B manufacturers may not produce any domestic cooking appliances or heating stoves and the remaining manufacturers may produce only "permitted types," that is simplified and lightweight models. The order contains eleven restrictions in all.

Of the production of permitted types of stoves, it was stated that approximately 75 per cent will be available for civilian use.

Koelbel Appointed

HERMAN H. KOELBEL was named May 19 to succeed Floyd D. Avis as division manager of the Jackson Division of Consumers Power Company. Mr. Koelbel is a veteran employee of 27 years' service with the company.

Lone Star Reduces Gas Rates

NATURAL gas service rates in towns served by Lone Star Gas Company pipe line with headquarters in Dallas, Texas, were reduced effective with meter readings of May 15, as the result of a voluntary agreement between the company and the Federal Power Commission. After several conferences with the federal commission and members of the Texas Railroad Commission President D. A. Hulcy, with the approval of the directors, consented without further hearing to reduce Lone Star Gas Company's gate rate from 40 cents to 30 cents per thousand cubic feet. The agreement carried a provision that the reduction would be passed on to domestic and commercial customers of the various distribution companies.

In announcing the reduction which was based on the voluntary agreement, Mr. Hulcy stated that one of the chief reasons for this action was his desire and the desire of other officers of the various companies to dispense with further extended litigation and to put all possible effort into winning the war.

Reconditioning Mains... *New Method of Coating Steel Pipe To Prevent Corrosion*

By R. B. ALLEN

Assistant to Supt. of Street Department, Michigan Consolidated Gas Company, Detroit, Michigan

FOR some years this company has been giving careful consideration to the problem of maintenance of uncoated steel pipe. The making of repairs as leaks occur by clamping or by renewing sections of main is unsatisfactory for the reason that it is costly and the remedy is not applied until some damage has been done and gas has been lost. Obviously, the desirable thing to do is to prevent the corrosion if this can be done in a satisfactory manner at a reasonable cost.

In Detroit, we have now developed a method for coating steel mains in place, which we believe is a step forward in the direction of a fair solution for the prevention of corrosion on them.

Type of Soil

The soil in the area in which steel pipe has been used is generally of a sand and clay mix and in appearance does not noticeably differ from the soil in other locations where we have experienced no unduly high rate of failure. Laboratory tests do not indicate the presence of any corrosive agents nor is there any indication of electrolysis. Of necessity, we have reached the conclusion that the soil itself is corrosive to steel and it is obvious that some protective measures must be taken to forestall the making of extensive replacements.

Repair Methods

Originally we had maintained the system by making spot repairs, but as the rate of failure advanced this practice was discontinued in favor of a program of replacement with coated and wrapped pipe. Such a program would have become burdensome unless the individual replacements were extended beyond that which was necessitated by the existing failures. In pursuing this policy, we found that much of the pipe was in relatively good condition and we therefore took under consideration the economics and practicability of a reconditioning rather than a replacement program, particularly where 4" and larger pipe was concerned. In addition to the economic aspect, a program of reconditioning mains rather than replacing them after failure would reduce the cost of inspection and repairs, interruption of service, and the possibility of damage resulting from leaks.

Reconditioning

In 1940, we selected a 1,400' section of 8" main, where we had previously experienced some maintenance, and on which surveys had indicated the existence of additional leakage, for a trial reconditioning job. The main was exposed and cleaned. Pits deeper than ⅔ of the pipe wall thickness were filled with welding rod and the pipe was then coated and wrapped. This work was done without any interruption of service and an analysis of the job substantiated the belief that reconditioning could be done at a cost appreciably less than that of renewal.

This experiment definitely demonstrated that some thought must be given to improvement of the methods used in certain operations, particularly excavating, cleaning, and coating. We were, of course, generally familiar with the fact that reconditioning was frequently and economically done on transmission lines located in thinly populated areas. We were not familiar with any reconditioning activity of mains directly supplying residential areas and not only involving many service and main connections, but also subject to the conditions imposed by the presence of other utilities, paved intersections, improved lawns, traffic, and the like.

When reconditioning is done in open country, the main can be completely removed from the ground so that no restrictions are placed upon the cleaning and coating methods and the size of the equipment used. Such methods applied to mains directly serving thickly populated areas would necessitate extensive interruption of service or the construction of temporary by-passes to supply individual customers. It would also necessitate open trenching across intersections and the rerouting of traffic. This, we felt would be objectionable from the customer and community point of view and it was therefore considered advisable to execute all operations without raising the main from the trench.

The presence of other underground structures, improved lawns, and occasionly restricted excavating conditions, advised that the trench be kept to a minimum width and it was therefore necessary to make use of pipe cleaning and coating equipment and methods which would operate within the allowable limits.

Excavating

The solution to the problem of excavating was simple. There is on the market a stripper bucket which in cross-section is reversed from the conventional excavating bucket and which is designed to fit a small wheel-type trenching machine and will excavate a trench 22" wide. The reverse design of the bucket permits of cleanly excavating over the top of the main and the rooters on the side of the buckets loosen and partially remove the dirt from the side of the main.

With the exact location of the main and connecting mains and services determined and with the digging wheel directly over the pipe, the trencher ex-

Paper presented at A. G. A. Distribution Conference, New Orleans, La., May 4-6, 1942.

cavated at a speed comparable to that of ordinary digging operations. The loose dirt was removed by hand so that when the excavating operation was completed, the main was in a position to be readily raised from the trench bottom.

Paved street intersections were crossed by a combination of open cut and tunnel, depending upon the conditions encountered. The use of stripper buckets resulted in excavating costs which were not appreciably higher than if the trench were being dug for a new main installation.

Raising the Main

With a minimum of 150′ to 200′ exposed, the main was raised with lever-type chain hoists and blocked at 40′ intervals 12″ above the trench bottom. Blocks were placed between the pipe and the ditch walls to prevent lateral shifting of the pipe. When obstructing conduits or pipe lines prevented raising the main, the trench bottom was dug out by hand to a depth of approximately 6″ below the pipe.

In cases where the main lay parallel to and a maximum of 1′ under the pavement, the trench was dug directly at the edge of the pavement to a depth slightly below the elevation of the pipe. The main was then exposed at 25′ intervals, pipe tongs attached, and the main pulled from its bed and blocked in the center of the trench.

Pipe Cleaning

The cleaning operation was and still is a major problem. We had found that the soil condition in at least a portion of the area formed a scale which was particularly difficult to remove. We became interested in the possibilities of flame cleaning and experiments made with an oxy-acetylene flame resulted in a pipe surface which was not only free of scale, but was perfectly dry and in excellent condition for coating. However, burner heads of a proper design for rapid large scale flame cleaning were not available. Furthermore, the cost of acetylene and oxygen for this purpose, although not prohibitive, was objectionable.

We decided to experiment with a burner head, using natural gas and air for fuel and it was with this kind of equipment that our 1941 program was executed. The flame cleaner burner head for 8″ pipe consisted of four circular manifolds made from 1″ steel pipe. The manifolds were connected to each other in parallel and were split and hinged for placing it on the pipe and for ready removal when passing over service and main connections. From each manifold projected seven Selas superheat slot burners arranged so that the flame was directed towards the pipe. When in position the flame cleaner completely encircled and rode on the main.

Fuel for the flame cleaner consisted of a pre-mixed atmosphere of natural gas and air. The natural gas was obtained from the main being reconditioned and air was supplied by a small gasoline-driven blower mounted on a two-wheel trailer. A flame temperature of approximately 3,000 degrees Fahrenheit was sustained with an input of 700 cubic feet of gas per hour.

Gas Flame Cleaner

The action of the flame cleaner resulted in rapid expansion of the scale so that its adhesion to the pipe was broken. In some cases scale literally "popped" off the pipe surface and in all cases it was loosened to the extent that it could be readily removed by mechanical scrapers. In order to obtain this effect, the flame temperature must be sufficiently high to expand the scale rapidly, leaving the pipe at a relatively low temperature.

The natural gas and air burning flame cleaner, having a low flame temperature, was not as effective in removing scale as was the oxy-acetylene burning flame cleaner. It was therefore necessary to follow the flame cleaner with a multibladed mechanical scraping device which encircled and was manually moved along the pipe with a reciprocating motion. The operation of the scraper effectively removed any scale left by the flame cleaner.

The necessity for the use of both the flame cleaner and a mechanical scraper was of some disappointment to us, but as long as the flame temperature is confined to that of natural gas and air, it is probable that we will have to continue with the mechanical scraper as an auxiliary cleaning device. The average rate of pipe cleaning was approximately 60′ per hour.

Following the operation of the pipe cleaner, the pipe was wire-brushed by hand to remove dust and at the same time inspected for pits and any possible remaining scale. The moisture-free surface of the pipe as left by the flame cleaner presented an ideal condition for coating. Occasionally, the coating operation was delayed and the pipe became wet from rain or other causes and in these cases a special burner, also using natural gas for fuel, was utilized for drying the pipe.

A heavy scale formation frequently covers up pipe failures which are not apparent until the scale is removed. In these cases, of course, the leaking gas was ignited by the flame cleaner, but such occurrences were few and are not difficult to handle.

Repairing Leaks and Filling Pits

After the pipe was cleaned, all pits having a depth of approximately 2/3 or more of the pipe wall thickness were arc-welded. Any leaks found were repaired by welding on patches or tapered plugs. Clamps or saddles covering previous leaks were removed and the leaks repaired in a like manner. All services and laterals tied into the main with saddles were reconnected with welding tees. We found the total cost of repairing leaks and filling large pits to average approximately $0.01 per foot, a small item when compared with the total cost of reconditioning.

Pipe Coating

Due to the limitation presented by the width of the trench, we did not consider machines in the application of pipe coating. The first coating application consisted of a rust inhibiting primer which was mopped onto the pipe, usually still warm from the flame cleaning operation. This was followed by a cold application of coating material which was hand applied and rubbed well into the surface of the pipe, leaving a layer of approximately 1/16″ of material on the pipe. This was then covered with a 5″ width wrapper spirally applied and then a final coating of material applied at a temperature of 400 degrees Fahrenheit flooded and rugged over the wrapper. This final application cooled to a plastic consistency and served as a seal coat and protection to the previous applications. This material was heated in a melting tank, using natural gas as a

fuel and with the heat thermostatically controlled.

Relaying Pipe

When the coating operation was completed, the chains and blocks holding the pipe in position were removed. It was sometimes necessary to keep a block in position after the coating was completed and in such cases the coating was patched at this point after the pipe was lowered in the trench. Before lowering the pipe to its final position, the ground under the pipe was raked free of stones and any other abrasive material in order to eliminate injury to the coating. With the pipe in position, the trench was carefully backfilled, using flat sand where the original soil was abrasive, and was then settled by flushing and tamping and the original road surface restored.

Testing Continuity of Coating

Prior to lowering the pipe, the continuity of the coating was electrically tested. We also considered it advisable to make provisions for future testing of the continuity of the coating. For this purpose, test leads consisting of a 6′ length of No. 8 rubber-covered wire, welded to the main with the other end terminating in a 6″ roadway box, were installed at 2,000′ intervals.

Reconditioning Costs

Our experience in reconditioning four miles of steel main in 1941 gave conclusive evidence that the various operations concerned were sufficiently efficient to justify their use. The most important factor in further reducing costs is the organization of a trained reconditioning crew. The reconditioning process presents a different type of work than do the usual new construction or repair jobs. It is definitely a production process and the failure of any one operation, whether due to personnel or equipment, affects the entire process.

Obviously, there can be many factors involved in individual jobs which may greatly add to or detract from the desirability of reconditioning. With no particularly favorable or unfavorable conditions to consider, the savings to be obtained by reconditioning is primarily dependent upon the size of the pipe concerned. Operations such as excavating, backfilling, and pipe cleaning are fairly constant and do not vary in proportion to the pipe size. We may generally expect the economies of reconditioning to be greater as the pipe size increases. It is doubtful that there would normally be any justification for reconditioning 2″ mains, but a savings of from 25% to 50% can be obtained on 4″ to 8″ sizes. The labor and material involved in the actual coating of pipe amounts to approximately 30% of the total reconditioning cost and is chargeable to capital accounts.

Accident Prevention Programs Geared to Meet War Emergency

RE-EXAMINATION of accident and fire prevention programs to meet conditions imposed by the war emergency is urgently needed, according to speakers at the Accident Prevention Conference in New Orleans, May 4, during the A. G. A. Natural Gas Section Convention. The conference brought out a large amount of material of interest to safety supervisors and personnel executives. Q. R. Dungan, Cities Service Gas Co., Bartlesville, Okla., and chairman of the Accident Prevention Committee of the Natural Gas Section, conducted the all-day meeting and luncheon conference.

Factors responsible for the need for a new approach to the accident prevention program include the tire and automobile shortage and the replacement of trained with untrained employees, according to A. W. Breeland, Lone Star Gas Company, Dallas, who conducted a panel discussion at the conference. Mr. Breeland stated that the responsibilities of the safety men had been increased because of the reduction of contacts with employees and the fact that many new employees are of sub-standard physical qualifications. Declaring that there is even greater justification for accident prevention work now than formerly, he said: "Unintentional accidents and fires aid our enemy just as effectively as if they were the result of sabotage."

As the leader of a symposium on "Streamlining the Accident Prevention Program to Meet the War Emergency," P. A. Alberty, Ohio Fuel Gas Co., Columbus, urged the delegates to "keep everlastingly and conscientiously at all features that will produce better and safer working conditions." He then outlined useful suggestions to improve safety programs.

Speaking at the luncheon conference, Charles A. Miller, division manager, personnel department, The Texas Co., Houston, said that management should give the same consideration to the safety department as it does to any other department. Instead of cutting down on safety meetings, Mr. Miller recommended increasing them by having smaller groups. He concluded that "in times of war certainly we must not do anything that will let the bars down on safety."

After noting that 95 per cent of the operating gas companies in the United States have less than 350 employees, A. J. Rummel, San Antonio Public Service Co., San Antonio, Texas, said that the majority of these smaller companies do not have a separate department to train men for specific assignments. The tendency in these companies, he said, is to train the individual by association in all operating phases of the business so that they will have a general working knowledge of all branches of the work.

Other speakers and their topics were: J. B. Harris, Arkansas Louisiana Gas Co., Shreveport, "Investigating Accidents and Developing Safe Practice Procedures"; A. H. Muncy, Canadian River Gas Co., Amarillo, Texas, "Maintaining Physical Property"; G. M. McClintock, Colorado Interstate Gas Co., Colorado Springs, "Employee Safety Meetings"; Thomas J. Lynch, M.D., Tulsa, "The Physical Examination Program"; and J. B. Hynal, U. S. Bureau of Mines, Dallas, "First Aid Training."

National Advertising Plans Approved

PLANS for the seventh year of national advertising were approved at a meeting of the industry Committee on National Advertising held in New Orleans, May 3. Chairman Thomas J. Strickler, of Kansas City, was in charge of the meeting.

J. P. Leinroth presented the proposed commercial and industrial gas campaign. Mr. Leinroth is chairman of the Advertising Committee of the Association's Industrial and Commercial Gas Section.

A second presentation dealing with the same subject was made by George Ketchum of Ketchum, MacLeod & Grove of Pittsburgh, advertising counsel for Mr. Leinroth's Committee.

Hugh A. Mitchell of McCann-Erickson, Inc., New York, described the plans for domestic gas advertising as previously approved by the Copy Committee. Companies shortly will receive schedules and advance reprints of the new campaign. In the meantime, a letter announcing the continuation of the advertising program will be mailed to all subscribing companies.

Members of the Committee on National Advertising and the Copy Committee who were present at the New Orleans meeting include: C. E. Bennett, J. F. Pollard, J. S. Spaulding, M. L. Sperry, J. V. Strange, H. Carl Wolf, R. T. Ratliff, T. H. Spain and W. G. Wiegel.

S. E. C. Permits Sale of Surplus Gas

IN an effort to aid war work, the Securities and Exchange Commission announced May 7 adoption of an amendment permitting industrial manufacturing companies to wholesale surplus electric and gas energy in connection with war-emergency activities without being subject to the public utility holding company act.

"The general effect of the rule," said the S. E. C., "is to prevent companies which would not otherwise be subject to the act as subsidiaries of registered holding companies or as public utility companies from losing that status as a result of war-time interchange of power."

The amendment adopts a new class of sales, which may be excluded from the gross sales. These new classes are:

Sales to tenants or employees of the operating company for their own use and not for resale.

Sales of gas to industrial consumers or in inclosed portable containers.

Sales of surplus electric energy at wholesale during the existence of the national emergency, and for one year thereafter, by any such company which is not a subsidiary or a registered holding company and which was not an electric utility company as of Jan. 1, 1941.

Uniform Insignia for Utility Employees

THE Office of Civilian Defense has prescribed official arm band insignia for various units of the United States Citizens Defense Corps. The insignia "shall consist of a white equilateral triangle embossed on a circular field of blue similar to the basic insignia of the Office of Civilian Defense." For utility repair squads, the identifying device, in red, is a pair of pliers, jaws closed, handles downward. A patent for this device is pending.

The general and special regulations have been published on page 3242 of the Federal Register for May 1 and it is stated that they will be issued in separate pamphlet form within a few weeks.

Propose Gas Line to New York

THE Federal Power Commission May 5 announced receipt of a new application by the Reserve Gas Pipe Line Company asking for a certificate of public convenience and necessity to authorize the construction and operation of a 1,500-mile natural gas pipe line from a point near the Texas-Louisiana State line to New York City. The cost of the 24-inch main transmission line, to be operated at a pressure of approximately 1,000 pounds per square inch, is estimated by the applicant to be approximately $80,000,000 "under normal conditions."

The market area for the proposed line is given as "Philadelphia, New Jersey, and New York City areas on the Atlantic Seaboard," and the gas would be transported through the States of Louisiana, Mississippi, Alabama, Georgia, South Carolina, North Carolina, Virginia, Maryland, Pennsylvania, and New Jersey.

A similar application was filed with the Commission on August 8, 1940 (designated as Docket No. G-180) and the application announced May 5 appears to be similar in all respects to the 1940 filing, except that alternate routes are said to be under consideration.

Lone Star Veteran Dies

DELMORE L. COBB, secretary-treasurer of Lone Star Gas Company and the last remaining executive who joined the company upon its founding in 1909, died suddenly May 9 at his home in Dallas, Texas.

Mr. Cobb was brought to Texas from Arkansas a year after his birth, his parents moving to Corsicana, the first Texas city to have natural gas service. He graduated from Southwestern University at Georgetown in 1898. His first step in the fuel industry was secretary of the Navarro Oil and Refining Company where he remained 10 years.

Joining Lone Star thirty-three years ago, he had a large part in shaping its policies and organizing its records and accounting procedure. At various times Mr. Cobb was active in numerous associations connected with the oil and gas industry.

Approved Inhalators

AT a recent meeting of the A. G. A. Accident Prevention Committee several communications referred to the increased sale of mechanical resuscitators (not inhalators) of the positive and negative pressure type similar to pulmotors, as a result of the tremendous interest in resuscitators during the war emergency.

It was decided that a list of all equipment approved to date by the committee should be published so that there can be no misunderstanding of the fact that the Association has not approved any "mechanical resuscitation device" for field use.

The inhalators approved by the Association to date are:

H. H. Inhalator
Mines Safety Appliance Company, Braddock Avenue & Thomas Blvd., Pittsburgh, Pennsylvania

Davis Inhalator (with improvements)
Davis Emergency Equip. Corp., 67 Wall Street, New York, N. Y.

Atmos and Portable Inhalators
Bishinger-Koehler Mfg. Co., Inc., Pittsburgh, Pennsylvania.

War Work Approved

A RESOLUTION strongly endorsing and approving the work of the Committee on War Activities was passed unanimously at the annual Executive Conference of the American Gas Association in New Orleans, May 4. Ernest R. Acker, president of the Central Hudson Gas & Electric Corp., Poughkeepsie, N. Y., is chairman of the committee which was organized in January to coordinate all war activities of the Association.

A. G. A. Rate Service IS VALUABLE AID

One of the most useful and valuable activities of the American Gas Association is the preparation of a comprehensive rate service. This service is invaluable in that it is the only one of its kind showing in detailed form gas rate schedules in actual use.

Issued in loose-leaf form, the rate service contains over 500 pages (8½" x 11") of complete and accurate information relative to gas rate schedules. It is leatherette bound and is kept up-to-date by monthly supplements.

Gas rates for hundreds of companies over the entire United States and Canada are reported in such detailed and excellent form that they should be of great assistance to rate-making departments in the shaping of new rates and industrial and commercial departments in evaluating sales comparisons with other companies.

In addition to all types of gas rate schedules, the service includes lists of communities supplied with gas, the companies supplying these communities and the heating value and type of gas served. Companies subscribing to this service have found it to be indispensable. Considering the value, the cost is nominal—initial subscriptions to members of the Association are $10.00 per year, including supplements, and $15.00 per year to non-members.

Problems Arising from Abnormal Demands for Gas Service

The Rate Committee of the American Gas Association wishes to take the opportunity of calling to the attention of the executives of member companies, by means of the A. G. A. MONTHLY, a memorandum issued in August of last year and reprinted below for convenience of reference, regarding "Problems Arising from Abnormal Demands for Gas Service."* The committee feels that the suggestions and recommendations made at the time of its first issue are now even more opportune and for that reason, submits the memorandum again for review.

DURING the present emergency many gas companies may be threatened with serious production, transmission, distribution or economic problems due to one or more of the following conditions:

(1) Greatly increased demands of both defense and non-defense industries for industrial gas. In many cases such plants are located at the ends of distribution mains.

(2) Shifting of population to industrial centers. This coincides with the construction of defense and non-defense housing developments.

(3) Requests for temporary or stand-by service to replace oil during the period of the threatened shortage. Thus far most of these requests have been for house or building heating or for boiler fuel in domestic, commercial or industrial establishments. The potential demand of individual establishments is, in some cases, very large.

The first two of these classes of service may or may not be of a temporary nature; the third will in most cases be definitely temporary and is likely to be noncompensatory unless there are adequate safeguards.

We consider it to be the duty of the gas industry and of the regulatory bodies to safeguard the quality and cost of service to existing customers, and, in the present emergency, to use every effort to see that the necessary demands of defense industries and their employees be fully met. However, gas companies are public utilities and as such have obligations to serve, which obligations must be met except as provided to the contrary by non-discriminatory rules established either by public service commission approval or by case precedent.

In the past, few gas companies have had need for rules of this nature; and as a result, few have them. Few have rates designed for temporary or standby service. In many situations such protection for both company and existing customers is now important, particularly in view of the requests for temporary or stand-by service from those now using oil. No two situations are alike, but it is strongly recommended that each company promptly review its rate schedules and rules in the light of its present local conditions.

Requests for service of temporary or stand-by nature are likely to involve three rate and managerial problems aside from those of whether plant may be expanded or operating technique improved to handle demands in excess of normal capacity:

A. Production, transmission and/or distribution capacity

B. Protective contract requirements

C. Public policy

(A) Production, Transmission and/or Distribution Capacity

1. The cost of metering and service facilities to supply the potential demand of the customer may be disproportionate to the probable consumption and hence to the revenue realized under existing rate schedules.
2. Expensive reenforcement of the transmission and distribution system may be required. The load gained through the temporary replacement of oil will be mostly space heating. In many places it will give a high, if not a maximum demand on the existing peak hour, as well as on the maximum day, both already greatly increased by defense industries and their employees.
3. Pipe lines and manufacturing plants may have inadequate capacity to meet the potential demands. The procurement of additional facilities at best would be slow and costly, and may be regarded as virtually impossible except where shown to be necessary for national defense and priorities for the required materials are obtained.

(B) Protective Contract Requirements

Where the capacity of the manufacturing plant, transmission or distribution system is apt to prove inadequate to meet the demands of existing customers plus the potential demand of the new applicant or applicants for service, the latter may be furnished service on an interruptible basis only, or refused service under approved non-discriminatory rules.

Where the margin of capacity above normal requirements is such as to indicate the desirability of supplying such service, it is suggested that consideration be given to inclusion in the contract of provisions of a protective nature along the following lines:

1. That the term of the contract be of a length sufficient to permit the company, by way of minimum charges, to be reimbursed for any extraordinary investment entailed.
2. That the customer shall pay in advance all costs of connection and disconnection (including main and service extensions where provided especially for such service) subject to refund when and if the service becomes permanent.
3. That the service shall be interruptible. Such a provision for other than large commercial and industrial customers is difficult to administer effectively but should serve to assist in the protection of the load of regular customers and to increase the margin of capacity available for the building of permanent load and for defense purposes.
4. That the terms of payment for gas appliances be shortened, particularly house heating equipment. The rental of conversion burners might be discontinued and their sale restricted.

(C) Public Policy

This is a mutual and an important problem of the gas companies and the regulatory bodies. It should best be handled by frank discussion and full understanding of the local conditions.

> "In particular, utility commissions and their staff technicians might be remiss in their duty to the public if they 'fail to question sharply any rate for stand-by or auxiliary service which appears to be less than or equal to the rate for complete service.' Under such circumstances, the utility should be required to show that its proposed rate is on a higher level than a complete service rate."†

In those situations where there is an insufficient margin of capacity to justify the risk of impairing the service to regular customers and to defense industries and their employees by taking on additional business of doubtful permanency, requests for such service may raise an important public relations problem. It is essential that the policy of the company and of the gas industry generally be explained in a manner which will forestall so far as possible adverse criticism for declining to supply this type of load. The interests of regular customers and of national defense rank first among the obligations of the gas industry and it should be emphasized that no company can provide temporary or emergency auxiliary service which may be detrimental to those interests.

By the RATE COMMITTEE,
C. L. FOLLMER, *Chairman*

Subcommittee:
ROBB QUINBY, *Chairman*
S. S. MASON
A. I. PHILLIPS

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* This memorandum was distributed in a letter to company members of The American Gas Association on August 14, 1941, and subsequently reproduced in the annual report of the Rate Committee.

† Regulatory Problems Incidental to Customer-Owned Generating Plants. E. Irvine Rudd. Annual Conference of State Utility Commission Engineers, May 13-15, 1941.

P.U.A.A. Presents Strong Program for New York Convention

A BANG-UP advertising and public relations forum geared to the changing requirements of war conditions will be offered to delegates at the annual Public Utilities Advertising Association convention which takes place June 22, 23, and 24 at the Commodore Hotel, New York City. Al C. Joy, advertising manager, Pacific Gas & Electric Co., San Francisco, and president of the association, will conduct the meetings.

Following an address of welcome by Henry Obermeyer, Consolidated Edison Co. of N. Y., Inc., the convention will tackle the major bugaboos of utility advertising Monday morning in a 90-minute session called "The Hellbox," at which all personal problems, griefs and accomplishments will be aired. E. K. Hartzell, East Tennessee Light & Power Co., and E. N. Pope, Carolina Power & Light Co., will guide this feature.

Headliners at Tuesday's sessions will be: George Whitwell, Philadelphia Electric Co., "What Advertising Means to Selling"; C. J. Allen, The Connecticut Light & Power Co., "Getting the Most Out of Small Budget"; and Ashton B. Collins, Reddy Kilowatt Service, "What Are They Thinking?"

Mrs. America gets the closing spot on the morning program with an hour's discussion of the gas and electric nutrition and home service programs led by Jessie McQueen, American Gas Association, and Elizabeth Murray, Atlantic City Electric Co., and featuring J. Ernestine Becker, Johns Hopkins University nutrition expert on "Food for Fitness."

The annual Better Copy Awards will be made at the Tuesday luncheon meeting.

You Have the Space—What To Do with It, Effect of the War on Utility Advertising, and Electric Companies under Business Management, are the important subjects to be discussed Tuesday afternoon. The speakers are, respectively, W. J. Weir, Lord & Thomas, New York; Davis M. DeBard, Stone & Webster Service Corp.; and Edwin Vennard, Middle West Service Co.

A two-hour meeting Wednesday morning will conclude the convention. This meeting will be devoted to committee reports, the president's report, and an open clinic discussion.

A display of current wartime utility advertising will be an interesting attraction at the convention.

Fiber Pipe Supplants Steel in Oil-Well Test

A NEW method of eliminating steel pipe in oil-well casing by substituting pipe made of molded wood fiber was proved successful in a southern Illinois test, Dr. M. M. Leighton, chief of the Illinois Geological Survey, announced May 7.

Dr. Leighton, pointing out that oil-well drilling has been curtailed because of the war-time steel shortage, said the new method "may prove to be of great importance to the oil industry" by permitting a greater number of drilling operations. He said the fiber pipe material is available in unlimited quantities at only a fraction of the cost of steel pipe.

The wood fiber casing proved successful, Dr. Leighton reported, in a test conducted April 28 at a shallow well belonging to Dinsmoor Oil Co. The operation in the 460-foot drill holes was completed in twelve hours.

The originator of the process is Frederick Squires, of Champaign, petroleum engineer for the geological survey, who said the new process was practical in any field where the well was being drilled to one stratum. Further experimentation is needed, he said, to determine if a method can be devised to prevent crushing of the wooden pipe when it has to penetrate one or more sands.

"The new method," Dr. Leighton said, "involves use of pipe composed of molded wood fiber and pitch, with self-sealing joints. . . . .

"In the field test, the new type casing was lowered into the drill hole and served as a form, around which liquid cement was run in the usual manner, filling the space between the pipe and the rock wall of the drill hole. After hardening, the cement forms a thick-walled pipe that protects the well from caving rock debris and corrosive waters. Steel was used only for the top and bottom lengths of casing."

Mr. Squires said the self-sealed joints of the wooden pipes permitted a faster casing operation than with steel pipes, pointing out that the wooden pipes are sealed by a few taps from a drop hammer while the steel sections are screwed together.

Fluid Terminology

GAS Registration Will Begin Tomorrow, said the *Times* headline. "'Gas' Dealers Want National Rationing," said the *Sun*, also using the quotation marks. All other papers in town just used the word "gas" naked (which, of course, should mean "an aeriform fluid, having neither independent shape nor volume, but tending to expand indefinitely"—Webster) without quotation marks, and while we are inclined to string along with them, we congratulate the *Times* and the *Sun* on their attempt to preserve the purity of the English language. It's a losing struggle for culture, like the Peloponnesian War, and it will haunt the minds of future school children long after everyone has forgotten what an X card was.—*New Yorker*, May 23, 1942.

Salesmen to Mechanics

SALES personnel left without work because of wartime appliance restrictions have been offered special training to qualify for mechanical jobs in war production industries or within the company, the Consolidated Edison Co. of New York, Inc., announced recently. Employees who volunteer will receive instruction in welding and machine processing, such as operating drill presses or lathes, after regular working hours in classes conducted by the company.

Employees will receive full pay during the training period of approximately two months.

Rare Chemicals To Be Registered

THE Armour Research Foundation in Chicago has established a National Registry of Rare Chemicals to act as a clearing house of information. The registry does not buy or sell chemical materials but maintains an indexed file of their sources. Chemicals which can be found in the catalogues of major supply houses are not included in the registry.

Maintained without charge, specific inquiries will be answered by the registry but the file is regarded as a confidential trust and will not be opened to general inspection.

Requests for file data have been made to some 2,000 industrial and educational laboratories.

Carbon Black Sales Up 22 Per Cent

THE carbon black industry reflected the demand made by the war in 1941, reaching an all-time peak both in production and in sales, the U. S. Bureau of Mines reports.

Production in 1941 was 594,065,000 pounds, 4 per cent above the record established in 1940; total sales were 644,744,000 pounds, 22 per cent above the 1940 figure, and 15 per cent above the record of 1939.

There were 365,377,000,000 cubic feet of gas burned in the manufacture of carbon black in 1941. The average yield increased from the peak of 1.54 pounds per thousand cubic feet in 1940 to 1.63 pounds in 1941. This gain was largely due to an increase in furnace blacks, which have a relatively high average yield.

Personal AND OTHERWISE

Stack Heads Tampa Gas Company

ALVAN H. STACK, management consultant with Ebasco Services, Inc., and former executive of the Florida Power & Light Company at Miami, has been elected president and general manager of the Tampa Gas Company. Harold P. Anderson, who has been directing the company's activities since the resignation of Roscoe Nettles, former president, has resigned as vice-president and treasurer.

Mr. Stack was formerly vice-president and general manager of the Utica, N. Y., Gas and Electric Co., an executive assistant of the New York Power & Light Co., and manager and director of the Warren, Pa., Light and Power Company.

Reed Elected to A. G. A. Executive Board

Hudson W. Reed

HUDSON W. REED, executive vice-president of The Philadelphia Gas Works Company, was elected a director of the American Gas Association at a meeting of the Executive Board in New Orleans, May 4. He fills the unexpired term of Conrad N. Lauer, president of The Philadelphia Gas Works Co., and past president of the American Gas Association, who resigned.

Col. Reed began his business career in the shops of the Pennsylvania Railroad at Renovo, Pa. Later he was engaged in mechanical and industrial engineering activities elsewhere in our Eastern cities.

In 1912 he entered the utility field and for five years was with Day & Zimmermann, owners and operators of gas, electric, and traction companies. He left Day & Zimmermann in 1917 to enter the United States Army. He was commissioned a Lieutenant Colonel in the Ordnance Department and served in the production and engineering branches of that service until the end of the war.

After the armistice, Col. Reed became a consultant on industrial engineering and management on the Pacific Coast, Middle West, and the Eastern Seaboard. In 1931, when general manager of the Shaw Crane Works, Muskegon, Michigan, he returned to the utility field with The United Gas Improvement Company, Philadelphia.

Conrad N. Lauer Retires as A. G. A. Director

Conrad N. Lauer

CONRAD N. LAUER, president of The Philadelphia Gas Works Company and past president of the American Gas Association, is retiring from the Association's Executive Board. Mr. Lauer served as president of the Association in 1938-1939 and has been a director for a number of years. His outstanding character and contributions to the industry were recognized by his associates in the following statement adopted at the Executive Board meeting in New Orleans, May 4:

"It has been a pleasure and privilege to serve with Conrad Lauer. His straightforward attitude, genial personality and unswerving adherence to the cause of truth have been an inspiration to us all. . . . In the busy world of today there is not always time to stop and take the measure of a man but Conrad Lauer's friendliness, his forthright, upstanding character, his bearing, his flair for personal friendship, have endeared him to us all. The gas industry needs more men like him. We shall not forget him. He has left a definite mark of accomplishment in the industry's Hall of Fame and having done his work well—now retires to a well-earned rest. We wish him well."

Newhall Joins Navy

BLACKWELL NEWHALL, assistant to the president of The Philadelphia Gas Works Company, has been commissioned as a Lieutenant Commander in the U. S. Naval Reserve. Mr. Newhall has been granted a leave of absence by the company. He reported for duty on April 27.

Mr. Newhall is a graduate of the U. S. Naval Academy, class of 1923. After graduation he served for almost two years as signal officer on the U.S.S. West Virginia.

Seven Employees Win McCarter Medals

SEVEN employees of the Consolidated Edison Company of New York, Inc., were singularly honored during April and May with the award of McCarter medals and certificates for the performance of outstanding acts of life saving. Those selected for this recognition are: Charles H. Buck, Alfred W. Friton, Alexander C. Polster, Nicholas M. Konner, Hugh Pues, George Sommer, and John J. Reardon. The presentations were made at two ceremonies by C. C. Simpson, assistant vice-president, and W. V. Munroe, assistant commercial manager—Manhattan.

McCarter medals are awarded by the American Gas Association and are donated by Thomas N. McCarter, chairman of the board, Public Service Electric and Gas Co., Newark.

Farnham Retires

THE retirement of Charles F. Farnham, advertising manager of American Stove Company, effective May 15, was announced last month.

Mr. Farnham began work for the company in 1907 as manager of the National Stove Company Division warehouse in St. Louis. In 1909 he went to Lorain, Ohio, to help the late Thomas Rath, then manager of the National Stove Company Division, with advertising. When the company began national advertising in 1919, he was named assistant to Mr. Rath, and in 1938 assumed the position he held until this year. His successor has not been appointed.

Tutwiler Honored

TEMPLE W. TUTWILER, chief engineer of the Cities Service Company and director of its oil and natural gas operations, was awarded the degree of Doctor of Laws at the University of Alabama last month. He is active in the planning and direction of new facilities for the manufacture of synthetic rubber, aviation gasoline, toluol, ammonium picrate and other essential war materials.

Following his schooling in Birmingham, Ala., and at the university, he entered the iron and coal business and in 1911 took charge of the construction of the first steel plant in India.

De Remer Resigns

E. M. DE REMER has resigned as general supervisor of industrial sales in the Southern California Gas Company to become an engineer in the Fluor Corporation of Los Angeles. Mr. De Remer, will specialize in problems connected with the oil and gas industry. These will include designing, engineering, and construction.

R. B. Grossman, former commercial sales supervisor, will succeed him in the gas company.

Completes Gas Course While in Army

AN excellent example of taking advantage of spare time during war to prepare for peace is furnished by Robert J. McCullen, 124 Ferry Street, Newark, N. J., an employee of the Public Service Electric and Gas Company.

Mr. McCullen enrolled in the Columbia University Extension Course in American Gas Practice in June 1940. Shortly thereafter he was called for a year's service in the United States Army. Instead of asking for an extension of time in which to complete the course, as has been done by a number of other men, Private McCullen took his books with him to camp and submitted his lessons at fairly regular intervals. He was able, therefore, after completing his year of training to finish the remaining lessons so that he has submitted the last lesson a full two months ahead of the two-year period which is normally allowed for the completion of the twenty-four lesssons.

What Private McCullen has done might be done by other members of the gas industry who are called into the service. Moreover, there is a demand by army officials for correspondence courses which may be used by men in the service. Mr. McCullen's example shows how gas company employees called to the colors may use spare time in preparing for better jobs when they return to the gas industry.

The Columbia University Extension Course in American Gas Practice was prepared by Professor J. J. Morgan, Chemical Engineering Department, in cooperation with men prominent in the gas industry. It furnished training in production, distribution and utilization of city gas. Some 2100 men have been enrolled in it during the past 17 years.

Full information regarding enrollment may be had by writing to Professor J. J. Morgan, Columbia University, New York City, or to Kurwin R. Boyes, Secretary, American Gas Association, 420 Lexington Avenue, New York City.

H. R. Sterrett Is Dead

H. R. Sterrett

HAROLD REID STERRETT, former president and member of the directorate of the New Haven Gas Light Company, New Haven, Conn., died at the age of 53. He had been in ill health for two years, retiring from the presidency a year ago.

He had been president of the New England Gas Association and of the Mid-West Gas Association. He was also prominent in the activities of the American Gas Association.

Before going to New Haven from Philadelphia in 1929 to be manager and vice-president of the New Haven company Mr. Sterrett had been an executive of The Philadelphia Gas Works, the Counties Gas and Electric Company of Ardmore, Pa., and the Des Moines (Iowa) Gas Company. He was elected president of the New Haven company in 1935. He was formerly vice-president of the Connecticut Coke and Gas Company.

He was born in Philadelphia and was graduated from the University of Pennsylvania in 1911. He was a director of many New Haven municipal enterprises.

George C. Blackmore Dies

GEORGE COLEMAN BLACKMORE, a founder of the American Society of Heating and Ventilating Engineers, died May 20 in Pittsburgh after an illness of several months. He was 75 years old.

Mr. Blackmore was president of the Automatic Gas Equipment Company of Pittsburgh, and a member of the American Gas Association.

"Who's Who" First Edition Out

A MOST useful and valuable reference book devoted to personalities in the gas and electric business has just been published, entitled "Who's Who in the Public Utilities Industry."

Compiled by Louis Stotz, author of "History of the Gas Industry," this first edition contains the photographs and career sketches of more than 200 key executives in these industries. It also contains historical sketches of the American Gas Association, the Edison Electric Institute, and a number of engineering and manufacturing concerns closely identified with the gas and electric industries.

Copies may be purchased at $3.00 each from Louis Stotz, P. O. Box 7274, Philadelphia, Pa. For orders of 10 or more, the price is $2.50 each.

Jeffe Joins Army

E. F. JEFFE, vice president in charge of sales of Consolidated Edison Company of New York, Inc., has taken a leave of absence to accept a commission in the United States Army Signal Corps. Nils T. Sellman, assistant vice-president in charge of sales, has been placed in charge of sales activities.

Heads Advertising Group

KAREN FLADOES, home economics director of The Peoples Gas Light and Coke Company, Chicago, has been elected president of the Women's Advertising Club of Chicago.

W. S. Rockwell Is Dead

WALTER S. ROCKWELL, chairman of the board of the Walter S. Rockwell Company, New York, manufacturers of industrial furnaces, died May 21 at his home in Morristown, N. J. He was 92 years of age.

Mr. Rockwell retired as president of his company ten years ago to become chairman.

CONVENTION CALENDAR

JUNE

June 4-5 **Canadian Gas Association**
Windsor Hotel, Montreal

5 **Ohio Gas & Oil Men's Association**
Deshler Wallick Hotel, Columbus, Ohio

5 **American Management Association Annual Conference**
Pennsylvania Hotel, New York

8-10 **National Office Management Association**
Annual Conference
Atlanta, Georgia

8-11 **American Society of Mechanical Engineers Semi-Annual Meeting**
Cleveland, Ohio

22-23 **Public Utilities Advertising Association**
Commodore Hotel, New York

22-24 **American Home Economics Association**
Hotel Statler, Boston, Mass.

22-26 **American Society for Testing Materials Annual Meeting**
Chalfonte-Haddon Hall, Atlantic City, N. J.

SEPTEMBER

Sept. 28 **Pacific Coast Gas Association**
San Francisco, Calif.

OCTOBER

Oct. 5-9 **National Safety Congress and Exposition**
Chicago, Ill.

12-14 **American Society of Mechanical Engineers**
Rochester, N. Y.

AFFILIATED ASSOCIATION *Activities*

Canadian Gas Association

LEADERS of the gas industry in Canada will meet June 4 and 5 at the Windsor Hotel, Montreal, to take part in the thirty-fifth annual meeting of the Canadian Gas Association. The meeting will be conducted by W. J. Pead, Jr., Montreal Light Heat & Power Cons., president of the association.

Practical messages of wartime significance highlight the program, which includes the following features: "The Gas Industry's Activities in Wartime," T. P. Pinckard, United Gas & Fuel Co. of Hamilton; "Market Survey," H. T. Nagel, Dominion Natural Gas Co., Ltd.; "The Gas Meter," J. D. von Maur, Consumers Gas Co. of Toronto; "Difficulties of Shifting Soil in Maintaining a Gas Distribution System," A. H. Harris, Jr., Winnipeg Electric Co.; "Observations from data taken with a Flash-Back Instrument," J. A. Morrison, Consumers' Gas Co. of Toronto; and "The CP Program—Its Accomplishments and Future."

Indiana Gas Association

A STRONG program with the accent on wartime performance was presented to some 250 Indiana gas executives at the thirty-second annual convention of that group held in Indianapolis, May 11-12. F. B. Culley, president of the association, presided at the sessions which included addresses by Governor Henry L. Schricker and Clarence Jackson, state director of civilian defense, and Albert O. Evans, district manager, Board of Priorities, War Production Board.

Personnel problems, emergency protection, post-war readjustment, appliance servicing, advertising and customer relations, and the national nutrition program, were among the major topics discussed.

Louis Ruthenburg, president of Servel Inc., paid high tribute to American industry's wartime performance, declaring that "history probably will record our industrial achievement as the greatest single development in the whole course of World War II." H. Carl Wolf, president, Atlanta Gas Light Co., described plans for handling emergencies and interruptions caused by sabotage and enemy attacks.

Dean A. A. Potter of Purdue University stated that the experiment station and the school of chemical engineering are seeking jointly a new gas fuel to replace natural gas if it is exhausted. "To protect the public from a possible shortage of natural gas, an effort is being made in our laboratories to develop a practical method of producing a high B.t.u. gas approximating natural gas in composition."

Other speakers included: B. T. Franck, Milwaukee Gas Light Co.; John Mellett, Public Service Co. of Indiana, Inc.; Jessie McQueen, American Gas Association; L. A. Kirch, Public Service Co. of Indiana, Inc.; R. J. Canniff, Servel, Inc.; Dr. H. S. Sauvain, Indiana University; Dean H. Mitchell, Northern Indiana Public Service Co.; J. M. Pickford, Northern Indiana Public Service Co.; C. A. Peterson and J. M. McCaleb, both of Citizens Gas & Coke Utility.

Pennsylvania Gas Association

P. T. Dashiell

DELEGATES representing public utility gas companies throughout Pennsylvania assembled in Philadelphia May 18 for the annual convention of the Pennsylvania Gas Association, with P. T. Dashiell, president, presiding. Mr. Dashiell is vice-president of The Philadelphia Gas Works Company.

Normally a three-day convention, the program this year was streamlined into a single day and evening session.

George S. Hawley, president of the American Gas Association, and L. A. Peterson, vice-president of the Otis Elevator Company, who addressed the morning session, discussed the importance of gas in today's emergency. Pointing out that all efforts of the Association are concentrated on aiding the war effort, Mr. Hawley said: "There is no gas company in America which has not felt the terrific pull of war. All units of our industry have been transformed and converted in line with special requirements of a state of war; and what is true of individual companies, is necessarily true of their national association."

The general sessions of the convention, held later in the day, were addressed by Walter C. Beckjord, vice-president of the Columbia Gas & Electric Corporation; George E. Whitwell, vice-president of the Philadelphia Electric Company; N. W. Shefferman, of Sears, Roebuck & Company, and Dr. Allen A. Stockdale, whose talks were built around the theme of the convention, "The Gas Industry in Defense and the Road Ahead."

Mr. Whitwell, who is chairman of the Managing Committee of the A. G. A. Testing Laboratories, declared the responsibility of the gas industry was not only to conduct its overall operations so as to make a maximum contribution towards winning the war, but also to do its utmost towards maintaining the satisfactory standards of living so greatly contributed to by modern gas appliances. Moreover, he added, the gas companies should give what attention they can, compatible with solving present problems, to those that will be of a post-war nature.

New Jersey Association Suspends Activities

F. H. DARLINGTON, president of the New Jersey Gas Association, has announced that all activities of that body have been suspended for the duration of the war emergency. Membership is to remain unchanged without payment of dues and present officers and directors will continue in office. Activities will be resumed at the call of the president.

The New Jersey association also voted to purchase $4,000 worth of War Savings Bonds.

Wisconsin Utilities Association

EDWARD R. FELBER, vice-president, Madison Gas & Electric Co., Madison, has been elected president of the Wisconsin Utilities Association. John G. Felton, La Crosse, district manager of the Northern States Power Co., was named vice-president, and D. W. Faber, Milwaukee, secretary of the Wisconsin Public Service Corp., was elected treasurer.

Gas Meters Association of Florida-Georgia

MILDRED M. LANE, Florida Public Service Company, Orlando, has been appointed secretary-treasurer of the Gas Meters Association of Florida-Georgia to fill the unexpired term caused by the resignation of H. Stuart Johnston who recently joined the Air Corps.

House Heating Group Elects Officers

WILLIAM B. HEWSON, manager of advertising and publicity, The Brooklyn Union Gas Co., was elected president of the Metropolitan House Heating and Air Conditioning Council on May 20. Harry Woolman, Jersey Central Power & Light Co., was named vice-chairman and Lewis Paulding, Long Island Lighting Co., was chosen secretary-treasurer.

How British Utility Accountants Met the "Blitz"

By E. N. KELLER

Manager, Customers' Accounts Division, Philadelphia Electric Co., Philadelphia, Pa.

E. N. Keller

IT was plain to anyone except a wishful thinker, as long as a year ago, that this country eventually would be drawn into the war. In the minds of many utility men, of course, entered the question as to how their operations would be affected if this country's cities were subjected to concentrated and prolonged bombings such as befell many cities in England.

While there has been much written about manufacturing, transmission and distribution problems under such conditions, very little has been said about the effect on accounting and related functions. Because of this and in the hope that something would be available for the American Gas Association annual meeting in Atlantic City last October, as Chairman of the Accounting Section, I wrote to two individuals in the British Isles for information. Replies were not received in time to be of any use last year, but some data has since been received which it is believed is of sufficient interest and value to place before you. In doing so, I would like to make it clear that I am attempting to do no more than interpret the information I have received, for which we are indebted largely to F. Lucas, secretary of the British Commercial Gas Association, London, and James Jameson of the Gas Department of the city of Edinburgh. It actually represents the experiences of nine large companies.

Property Damage

In England, of course, the biggest single factor to cope with has been property damage. Due to efficient methods for the protection of the civilian population, casualties have been reduced to a minimum even though property damage has been heavy. The English people have learned to curb their curiosity when "Jerry", as they call the Nazi Luftwaffe, flies overhead. The fate of Lot's wife was kind compared to what the Englishman suffers if he does not resist the urge to see what is going on.

Naturally, since the war began there have been many financial adjustments but the one in which most utility people are interested is what they have done regarding that bugaboo "installment or time payments." In England they have endeavored to avoid inflation caused by higher wages and have curtailed the time limits on what they term "hire leases." They, as well as we, have learned a lesson from the last war and have sought to avert another financial depression which inevitably follows inflation.

Here, we have Regulation W recently amended to require approximately one third down payment with a maximum term of 15 months for appliance sales. In England, they have paralleled this quite well, generally with one third down and terms not exceeding a year, although there are some appliances on which longer terms are permissible. Recent restrictions here on the manufacture of many appliances will curtail sales quite effectively. Information concerning this angle in the British Isles is not available in any of the data I have received.

Taxes in England

An always important subject is taxes, and undoubtedly you are much interested in what has been happening in that respect in England. There is not too much information about that contained in the letters received, mainly I believe, because not much stress was laid on it in asking questions. However, it has been volunteered that insofar as individual income taxes are concerned the rates are far in excess of those in this country, even under the most recent tax laws; although some of our own economists maintain that "hidden taxes" bring the American taxpayer to the British level. Corporation taxes are described as extremely heavy. The odd part of it is that there is no note of complaint of unfair treatment. One might expect that there would be, because an individual to have a net income of $25,000 must earn over $500,000 per year. This is just an indication of the burden they are bearing in this respect.

Insofar as the internal workings in the company's office buildings are concerned, precautions were taken to reduce the risk of loss by the utmost decentralization and, further, by duplication of records by photographing and other means. For instance, in customers' records it had been the general practice in the British Isles, as it is here, to maintain in an office the meter book, the stub or bookkeeping record and in some instances the billing equipment. By the process of decentralization in England, they have so planned things that these three records for any one locality are contained in different buildings. Thus, if a bomb hits one of the buildings the record can be wholly or partially duplicated from the equipment or records in another.

Many people here feel that bombing is a remote possibility. We should take steps, however, to consider effective means of protection before the event occurs, for certainly it is better to be safe than sorry. Some companies here have already taken appropriate steps in areas where bombings might occur. Incidentally, the President said that Detroit or even Chicago might be bombed, so that doesn't make any of us immune. In England, even emergency supplies such as forms and stationery have been lodged in different locations.

Customer Accounting

Insofar as accounting, meter reading and collections are concerned, the problems may be either or both in the field and in the office depending upon where the bomb hits. If the company's office escapes damage or destruction by reason of a nearby hit, then, of course, records, accounting equipment and personnel may not be affected. Destruction of customers' homes in addition to the loss of meters, services, etc. naturally forces mass evacuation of customers to more remote areas and many of those affected are destitute.

Let us look, therefore, at the customer's problem and the result on the utility company's operations. Naturally, in many cases individual customers or their whole families have been killed and their homes totally destroyed; in other cases, while the customers may have escaped serious injury, the building itself has been demolished. therefore, the utility is faced with the customer's inability to pay for bills already rendered and for the use of service up to the time of bombing. In the latter case, because the meter is often destroyed, such billing must of necessity be estimated.

Billing in the British Isles, generally speaking, is on a quarterly basis and losses, therefore, are probably higher because of

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Part of paper delivered at Joint Accounting Conference in Cleveland, Ohio, May 11-12, 1942.

bombing than would be the case if billing were on a monthly basis. Naturally, the greatest obstacle is in finding the customer who may have escaped injury and who has been forced to move to another locality. The first resort is to the Air Raid Precaution office in the section, with whom customers generally are registered and may or may not have left information as to where they have gone. If this fails, they address a letter to the customer which it is hoped will be delivered through the Post Office.

Strange to say, not very much trouble is encountered in locating former customers in bombed areas. It may be a peculiar quirk of human nature, but something more than the building itself seems to draw a man back to his old home, to view the damage and seek information about his former neighbors. Where, of course, the customer either refuses to pay (which is rare considering the number of cases) or where he cannot be located, the amount is charged off but it can be billed to the government under the War Damage Act. It hasn't been stated whether this is based on revenue lost or the value of gas or electricity at production prices. In addition, the utility can claim under the War Damage Act any losses to company property such as meters, etc. Incidentally, a substantial portion of customers are served with prepayment meters and when these meters are blown up the coins scatter widely and it seems that the utility inspector is on the job very promptly to gather any coins he may find which presumably come from the meter.

I mentioned previously that quarterly reading and billing is the general rule for ordinary meters, although strangely enough this is not always on a continuous basis which obviously causes peaks in the work, but they are learning that this can be overcome by going to a continuous plan.

As in this country, except perhaps to a greater degree, the functions of meter reading and collecting are restricted by the fact that in many cases all members of families work and therefore there is no one at home to admit the utility company representative. They have to resort to shift work and other means to get readings in such instances.

Continual rerouting of meter reading is a necessity because of the devastation of wide areas. The migration of customers causes problems in addition to the collection of bills in that the revenue of the utility from whose locality the customers depart is adversely affected which, in turn, has caused such companies to ask for increased rates, which have been granted when they could be substantiated. On the other hand, the utility in the locality into which these customers go has been affected in the reverse fashion, i.e. the use and therefore the revenue has increased which has enabled those utilities to operate without increase in tariffs; the increased revenue helping to offset added expense due to higher wages and increased personnel due to the use of female labor in place of male.

It is interesting to note that because of the demands of the armed forces it has been necessary to replace male help with female even in such operations as meter reading, collecting, etc. It is stated that a good job is being done by these women although the efficiency is somewhat lower—requiring approximately three unskilled women to every two men formerly employed. The wages of the women, of course, are not as high as for the men but even so the total overall

Cleveland Accounting Conference

THE meetings on War Emergency Accounting Problems and Procedures held in Cleveland, May 11 and 12, were attended by 400 utility accountants. The conference opened with a general session for all those registered, at which time E. G. Crawford, president of The Cleveland Electric Illuminating Company, welcomed the delegates to Cleveland and sounded the keynote. E. N. Keller, of the Philadelphia Electric Company, presented first-hand information received direct from England on experiences of the utilities there in war and bombings. His paper is reprinted herein.

"Safeguarding Records From Air Raids" was presented and discussed by E. H. Conarroe of the Metropolitan Life Insurance Company. This company is conducting a very intensive study of methods used by utilities and other industries for protection of records, and will shortly issue a booklet containing the information gathered. This booklet may be secured from the Metropolitan Life Insurance Company.

Another very serious problem, that of shortage of personnel, was discussed by J. D. Dingwell of the Washington Gas Light Company, who offered timely suggestions for procedures to relieve the situation.

These various emergency problems were given more intensive attention and discussion in group meetings devoted to specific subjects during the balance of the two-day conference, as were also other pertinent problems related to meter reading and billing, collections, customer relations, plant and stores accounting records reports, office equipment, transportation, taxes, etc.

As far as possible, the papers presented will be reproduced immediately. A complete set will be sent to each company member of the American Gas Association and additional copies may be obtained for $1.00 each.

Conference of utility accountants in Cleveland, May 11 and 12, where war emergency problems were clarified

cost has gone up slightly. It might be noted that in this country, while there has been some indication of the use of female employees on such operations it has generally been frowned upon and in some states, notably Pennsylvania, the regulations of the Department of Labor and Industry strictly prohibit the use of women for reading or testing gas and electric meters. War, however, changes many things and we may have to resort to it also.

There are some who believe the possibilities in the use of female labor have been woefully underestimated. This seems to be borne out by experience abroad where women have taken over the job of the milk man, the street car motorman and conductor, bus and ambulance driver and even the gas maker! In Russia it is common knowledge that women have been doing men's jobs for ages, even now as fighters in the army and air force. In our own country in pioneer days, and some places even today, women did much manual labor. When we finally come to the full realization of the seriousness of the war situation, these outmoded ideas of restrictions on female labor will be discarded, for it eventually will become a case of the survival of the fittest and we, as a nation, can't survive in competition with totalitarian nations unless we accept at least one of their doctrines—work for everybody.

The Lady Gas Man

Many amusing incidents have occurred as the result of the widespread employment of women in the British Isles. They tell tales of a child calling to its mother, "Mother, here's the lady gas man to look at the meter." At first, it was a novelty but, like everything else, women doing men's jobs have now become commonplace and receive scarcely a passing comment. Most of them wear what approximates a uniform and even with a cap are particular to see that a curl peeps out from under—the "eternal feminine" I guess you'd call it. The prevalence of women in slacks has evoked from a certain wag these lines which I think are to the point:

"We may still call the girls peaches,
We may still dub them flirts
But sometimes I wonder
Can we still call them "skirts!"

Female help is coming into its own in another way. Those who have been engaged in office work have in many instances been elevated to positions of a supervisory nature to take the place of men who have gone into military service. While this doesn't necessarily reduce cost, in fact in certain cases it has increased the cost, yet it is said that these women are making good and the operations are continuing satisfactorily with a minimum of top supervision.

There is a definite plan of cooperation between utility companies to transfer help from a locality which has not been affected to one which has been bombed, until the latter gets itself straightened out. This is a lesson we might take, for it is an effective means of bringing order out of chaos. As the information came to me all of this is done in a matter of fact manner which would lead one to think that they are taking it in their stride, which I suppose they are. Nevertheless, it isn't hard to visualize the quite confused condition which results from a catastrophe of this sort, especially in those places where widespread areas are affected.

There is a loyalty expressed in all the information I have received, on the part of employees to their employer, but it certainly isn't all one-sided. Employers have shown a humane attitude not only to their employees but in the case of utility companies to their customers. In many of the larger companies the Home Economics Department has set up community kitchens for mass feeding after a "blitz" and this has met with universal appreciation. Also, due to the rationing of matches, the gas companies have an everlasting flame set up near the door of their offices and any passerby can get a light for his cigarette with the compliments of the utility company.

The people have been welded together by common necessity. War is the great leveler and that is one of the lessons they have learned. Bombs have no respect for wealth or position and many an uneducated Mr. Milquetoast has reached the heights of heroism and earned the commendation and respect of his betters.

The British Isles are fortunate in the fact that their people are all of one race and there is no such menace of sabotage as we face in America. However, strong metal comes out of a melting pot and if we in America, who are more united today than ever before, will take heed from our British brothers and anticipate the problems that will confront us, the spectre of the Rising Sun and the paperhanger of Berchtesgaden will hold no terror for us.

Signing Up for Gas Was a Serious Move in 1854

BECOMING a gas customer was a pretty serious undertaking in San Francisco back in 1854 at the start of the San Francisco Gas Company, the first root of the Pacific Gas and Electric Company's family tree. The details come from an advertisement inserted by the pioneer utility in the San Francisco City Directory for 1854, a copy of which is in the possession of S. H. Hermann, certified public accountant, 619 Mills Building.

Serious undertaking is right! The original customers or their "duly authorized attorneys" had to sign service contracts containing almost as many clauses as an average peace treaty and, in addition, property owners had to give written consent before gas could be "introduced into the premises" for tenants.

Some of the other rules and regulations follow:

"The company will require security for the payment of the gas expected to be consumed.

"The service pipe from the main to the inside of the building will be furnished by the company at the cost of the consumer.

"All meters will be furnished and put up by the company without cost to the consumer—except where a shelf is required for the meter, in which case the cost of the shelf will be charged.

"The company shall have the authority whenever it is deemed necessary to substitute alcohol for water in the meter.

"All screws used in putting up gas tubing shall be made to such standard sizes as may be authorized by the company and no tubing shall be used except such as may now or hereafter be allowed by them.

"The bills shall be rendered monthly unless the company, or its authorized agent, shall think it expedient to provide that they be settled weekly.

"The company recommends that proper attention be given to regulating the height of the flame, on which depends the quantity of gas consumed. By raising the flame to moderate height the most perfect combustion and brightest light are obtained and the use of gas is thus rendered both pleasant and economical, being entirely free from smoke or the least unpleasant smell. The burners should also be kept free from dust and, if at any time they become obstructed, the application of a brush to the apertures will immediately remove the difficulty."

—P. G. & E. Progress

Trouble

THERE'S one thing about Trouble. It is easier to keep out than it is to get out.

Same thing with Accidents. An accident is always unexpected; it's always a surprise, usually a shock, and often it's harder on the victim's family than on the victim.

Accidents involve suffering, often disrupting all one's plans and schedules.

When an accident happens—it's too late.

For all reasons, human and economic, accidents should be stopped before they start. No one person, no group or section, can prevent accidents. These agencies help; equipment and its design help.

If you don't want an accident it's up to you.

You can do more to avoid an accident to yourself than all the devices ever invented.

It takes thought, it takes care, but over everything else, it takes the will to do.

Your accomplishment brings its own reward to you and in addition may save from great anguish those interested in you.

It's easier to escape an accident than its consequences.

—*C. E. Paige*

Wartime Shift from Sales to Service Reflected at Residential Gas Conference

ALTHOUGH government restrictions have suspended gas appliance sales campaigns, there's still a big job to be done by sales, servicing and advertising personnel during the war, all speakers emphasized at the Residential Gas Sales Conference, May 5 and 6, in New Orleans, La. In addition to the number one task of winning the war, more ingenuity and more sound constructive effort is needed than ever before if gas is to emerge in the post-war period with what one speaker called "A1A" customer acceptance.

The two-afternoon sales conference was a part of the Natural Gas Section convention. C. B. Wilson, chairman, Residential Gas Sales Committee, Natural Gas Section, and new business manager, Arkansas Louisiana Gas Company, Little Rock, presided at the meetings which attracted sales and advertising executives from all parts of the country.

Appliances Restricted

W. E. Derwent, president, Association of Gas Appliance and Equipment Manufacturers, and vice-president, George D. Roper Corp., Rockford, Ill., in opening the conference said that "little in the way of gas appliances can be expected, aside from those required for the Army and Navy and governmental housing, with a possible minimum supply beyond that for the essential civilian replacement for non-repairable units." He expressed the belief that after American industry gets rolling it may be possible for the government to lift some of the restrictions on civilian durable goods.

While urging gas companies not to disrupt sales organizations, if reductions had to be made, he recommended a shift of appropriate sales personnel to the service department and the inauguration of an extensive service program. He also called for a careful study of local dealer organizations and more assistance to them in solving their problems.

In reference to post-war activities, Mr. Derwent said that gas appliance and equipment manufacturers would continue research and development but that they, in turn, expected utility management to continue with sales and advertising efforts to prepare for this post-war program. "One without the other cannot survive and in the interest of planned economy, both must be done," he said.

Stopping the sale of gas appliances doesn't stop the customer's reaction to gas, J. W. Lea, commercial manager, Atlanta Gas Light Co., Atlanta, Ga., pointed out in an inspiring address. "Since we won't be able to sell the customer a new range, we are going to have to compensate by being unusually sympathetic in our attitude toward him and, most important, use every bit of ingenuity at our disposal to keep his appliances operating as well as possible." Urging a program of appliance inspection, he warned: "Whichever of the competing fuels most nearly solves his operating problems produced by the war, is going to get the largest share of stored up good will to push him on into a high rank in the rebuilding future."

"Let's do more building for the future," Mr. Lea continued. "Keep up your advertising just as long as it is humanly possible. Help sell war bonds with it; help the salvage movement, but teach better nutrition, better buying habits; keep on building a surplus of good relations. Then when the new Royalty, Their Majesties, Mr. and Mrs. American Homemakers resume gracious living on new high standards after the war, they will not have forgotten that gas is the ideal fuel."

Effect of War

Thirty months of war have had a profound effect on gas company operations in Canada, it was brought out in a paper by Charles M. Sieger, United Gas & Fuel Co., Hamilton, Ontario, which was presented by S. B. Severson, vice-president, Republic Light Heat & Power Co., Inc., Buffalo. First and most startling fact was the increase in industrial gas sales in 1941, which were 400 per cent of pre-war sales in Mr. Sieger's company. This figure was expected to be increased to 900 per cent by the beginning of 1943. In spite of considerable increase in plant capacity, the problem of meeting this load and maintaining residential gas customers is still critical.

In January of this year, after an extremely cold spell forced Canadian gas companies to shut down a few war industries, the government took drastic steps to curtail and

Panel discussion at the Residential Sales Conference in New Orleans. Left to right: C. B. Wilson, chairman, acting as questioner; Chester L. May, president, Community Natural Gas Co.; W. M. Jacobs, Southern California Gas Co.; Frank C. Smith, president, Houston Natural Gas Co.; F. M. Rosenkrans, The Gas Service Co.; R. D. Maxson, Public Service Co. of Northern Illinois; J. French Robinson, president, The East Ohio Gas Co.; and Walter C. Beckjord, vice-president and general manager, Columbia Gas & Electric Corporation

practically stop the sales of all gas appliances, Mr. Sieger reported. A government order forbade the laying of new mains, installation of new services, or the addition of new appliances of any sort. It even restricted replacements except by permit from the Power Controller of Canada. The sale of all commercial gas appliances has long since been stopped, he said.

The gas industry has five wartime obligations in connection with advertising, D. C. Schnabel, Bozell & Jacobs, Houston, Texas, told the conference in an eloquent presentation on "What to Tell 'Em When You Can't Sell 'Em." They are: (1) To report on our plans for supplying gas to war industries and at the same time maintaining dependable service to home, shop and factory; in other words, helping win the war. (2) To educate and train customers in the patriotic uses of gas. (3) To back up to our utmost our sales allies in their hour of trial. (4) To sell the customer on keeping his appliances efficient. (5) To stay in the gas business and earn a return.

Urging the gas industry to lay its advertising upon the altar of patriotism, Mr. Schnabel concluded: "Vital as advertising can and must be to the discharge of wartime responsibilities, it is still only as effective as the purpose behind it. And the purpose must be interpreted in acts. It is what you feel and what you do that will lend vitality to what you say. . . . . *Put your country before everything else,* and you'll come out all right. As Theodore Roosevelt phrased it, 'I want to see you shoot the way you shout.'"

Panel Discussion

A valuable feature of the second session was a question-and-answer panel discussion which ran the gamut of sales, servicing and advertising problems. Chairman Wilson acted as questioner and the following board of experts answered: Walter C. Beckjord, vice-president and general manager, Columbia Gas & Electric Corp., New York; W. M. Jacobs, general superintendent, Southern California Gas Co., Los Angeles; Chester L. May, president, Community Natural Gas Co., Dallas; R. D. Maxson, manager, gas operations, Public Service Company of Northern Illinois, Chicago; J. French Robinson, president, The East Ohio Gas Co., Cleveland; F. M. Rosenkrans, new business manager, The Gas Service Co., Kansas City; and Frank C. Smith, president, Houston Natural Gas Corp., Houston.

Following introductory questions which established the extent of each participant's domestic gas business and the effect of war activities on gas sales, the group supplied a cross section of gas industry information on sales personnel, appliance servicing and maintenance, advertising, home service, promotional and public relations problems. Of particular interest were general questions such as: "What is your company doing to retain prospects for house heating under the restrictions imposed by Order L-31?" "What methods are being utilized to retain customer acceptance of gas services for the duration?" and "To what extent are you tying-in with the national nutrition program in addition to your home service activities?"

Cooperation with the national nutrition program was strongly urged by C. C. Young, assistant new business manager, The Gas Service Co., Kansas City, who described what gas companies have accomplished in this field. He said that the industry could be proud of the work of its home service departments "who have won both national and local recognition through their untiring efforts in behalf of food nutrition" but that there was need for more support from management. He reviewed the work of the special Nutrition Committee of the American Gas Association headed by B. A. Seiple, vice-president, Jersey Central Power and Light Co., Asbury Park, N. J., and stated that a nutrition manual prepared by this committee would be released shortly. In conclusion he presented the nutrition program of The Gas Service Company and affiliated companies.

A summary of conference highlights was ably presented by F. C. Armbruster, supervisor, gas utilities, Middle West Service Co., Chicago. In his recapitulation, Mr. Armbruster emphasized again the importance of instructing and educating our customers in proper maintenance and care of appliances and recommended continuance of the Certified Performance range program in some form. "It is inconceivable," he said, "that the symbol of a united industry—CP—should be lost to us, or that the organization established in this field should be abandoned."

Misplaced Patriotism

ADVERTISING which employs patriotism as a sales argument is a sordid spectacle. Happily there has been very little of it to date—an infinitesimal proportion compared with the great mass of advertising. But even a little is far too much.

Patriotism has its place in advertising, of course. The numerous inspirational messages in behalf of national unity published and broadcast by advertisers following the Pearl Harbor attack constituted a genuine and valuable public service. The same may be said of advertisements which devote time or space to furtherance of national aims, such as the sale of Defense Bonds or suggestions for conservation of strategically important materials. Messages which tell of the progress of a company's contributions to armament production likewise serve a laudable purpose.

Use of flag-waving appeals in an effort to influence purchase of the advertiser's goods or services is something else again. This kind of thing is not merely in poor taste. It is bad business practice. Most people readily see through such shoddy bids for patronage. They have only contempt for a business which seeks to make capital of the nation's battle for freedom.

It will be important for all advertisers to remember that standards of good taste in regard to patriotic expressions have changed considerably since the United States became actively engaged in the war. National pride is far more intense. Patriotic emotions are a serious business.

Some of the more indirect usages of the patriotism angle which got by during the pre-war months will not be viewed so tolerantly by the public from now on. One such, which became rather widespread, was the glibe use of the phrase, "the American Way." Prize example, in our memory, was the whiskey advertiser who insinuated that it was "the American Way," originated by our forefathers, to get a snootful of the company's particular brand of bourbon on Thanksgiving Day. There has been too much looseness, too, with the "V" for victory symbol. This after all represents a grim and dangerous undertaking on the part of oppressed peoples and should not be treated with flippant commercialism.

Before running an advertisement of patriotic character, the advertiser would do well to ask himself two questions. Is this message a grandstand bid for attention for company or product? Or is it an unselfish expression of good citizenship? By applying this test honestly, it should be possible to avoid any chance of committing an offense that gives a bad name not only to the sponsoring company, but to all advertising and all business. (Editorial from *Printers' Ink*, January 2, 1942.)

Storm Over Tokyo

THE Japanese customer who allegedly wrote the following letter to the service department of the Tokyo gas company certainly expressed his exasperation picturesquely, whether or not he had cause for complaint:

"Sir and Dear Gentleman:

"I have possess your hot water-keepers for ten month beginning last year. I make purchase of him from T. Shokomoto Import Company. Do you remember me? Thank you. But I must say that the flabbergast on those purchase have come to my end. What the Sam Jones are the matter with those hot-water keepers? My hot-water keeper cannot keeping hot water in its stomach, all time keep only cold water. And for past three months the burner of iron makes fires up the back every week very punctual. This are to angry me because fellow citizen come to my house and starting laughing saying the following nouns:—Get bucket by the day stove, Get a bucket by the day stove, which I are threat to do in the soonly future if no advice are in advance. It are bitter lump because when I telling my friendships that I am going to purchase your water-keeper they say, I told you so.

"In irritate your loving customer.

"B. G. Yohomato

"P.S.—You got no more business running water-keeper factory than for Goodness Sake. That is all I hope.

"Me again in storm, B.G.Y."

Production for War Is Keynote of Industrial and Commercial Meetings in New Orleans

G. F. B. Owens

GAS at work in the war production front was the theme of the industrial and commercial gas sessions in New Orleans, La., May 4 during the annual Natural Gas Section convention. A strong array of leading industrial and commercial gas men and equipment manufacturers presented papers on the use of gas in war factories, and army and navy bases and camps. The suggestions were of immediate importance and interest because of the unprecedented expansion of industrial gas outputs and the tremendous quantities of industrial gas equipment being produced at the present time.

Gas in War Production

George F. B. Owens, assistant vice-president, The Brooklyn Union Gas Company, and chairman of the Industrial and Commercial Gas Section of the American Gas Association, presided at the morning session. In opening the meeting, Chairman Owens emphasized the fact that important improvements in industrial gas equipment had caused industry naturally to turn to this fine fuel when production for war began to overshadow every other consideration. He pointed out that the record made by industrial gas in war production up to the present time has met exacting requirements laid down for it, and stated that it was impossible to estimate how much industrial gas equipment will be connected to our lines before the war is won.

Walter N. Ford, United Gas Pipe Line Company, Shreveport, La., gave a review of industrial and commercial gas in the war effort in the South and Southwest. After outlining the reasons why so much war work is being concentrated in that area, Mr. Ford explained how his company works closely with army and navy officials and executives of war production plants to assure the most effective use of natural gas in the war effort in their large territory. The very effective national industrial gas advertising sponsored by United Gas Pipe Line Company for several years back has been instrumental in locating considerable war business in the Gulf Coast area.

Following Mr. Ford, Oscar C. Warren, Birmingham Gas Company, Birmingham, Alabama, told how close relations with industrial and commercial customers is helping the war effort in the Birmingham territory. Being the center of the heaviest manufacturing area in the South, Birmingham has had to meet many problems connected with the output of industrial materials that are not encountered in most other cities. Mr. Warren's presentation told how these problems have been met through cooperation of gas company and customers to the satisfaction and benefit of all parties.

Presenting for the first time the completed A. G. A. requirements for installation of gas burning equipment in power boilers, L. S. Reagan, Webster Engineering Corp., Tulsa, Oklahoma, gave a background of the preparations for these new requirements, which will become effective January 31, 1943. Mr. Reagan is a member of the committee that prepared the requirements.

Heretofore, there have been no national standards for installing gas burning equipment in power boilers. It is therefore expected that these new requirements will be valuable not only to gas companies and to the users of natural gas in power boilers but also to local building and inspection authorities and to insurance companies, a number of whom assisted in the preparation of the requirements. Mr. Reagan answered a number of questions from industrial engineers pertaining to various sections of the requirements. Printed copies will be available this summer.

Gas Engine Census

The chairman of the A. G. A. Gas Engine Power Committee, G. R. Walton, United Gas Pipe Line Co., Houston, Texas, presented a preliminary review of the annual A. G. A. Gas Engine Census. Mr. Walton's advance figures indicate that there has been a substantial increase in the number of gas engines installed during the last year as well as in the total horsepower connected. Increases were also noted in the sales of gas and in revenue from gas engine power users. Mr. Walton discussed a number of interesting phases of the use of gas engines in war plants and answered questions from the floor. The annual A. G. A. Gas Engine Census will be published this summer.

In a most interesting paper, Karl Emmerling, assistant general superintendent, The East Ohio Gas Company, presented some thought-provoking material on "Industrial and Commercial Gas Equipment—The Outlook for the Duration." After reviewing their situation with respect to priorities for industrial and commercial gas equipment both in government and civilian establishments, Mr. Emmerling told how industrial gas men assist customers to get the most out of industrial furnaces and ovens during the war period. Examples were given of how industrial engineers of The East Ohio Gas Company had been instrumental in getting additional equipment shifted from one plant to full production in other plants. He urged all present to scour their territories for additional equipment so that it can be put into use at the earliest possible time. Further, he explained how alterations and repairs can be done most expeditiously under present conditions to the end that equipment can be used the maximum number of hours per month.

Serving the Army

"What do the men in army camps eat, how is this vast quantity of food prepared, and how is commercial gas doing its part in feeding an army?" These questions were dramatically answered at the Industrial and Commercial Gas Luncheon on Monday by Daniel J. Brogan, sales manager, The G. S. Blodgett Co., Inc., Burlington, Vt., a company which has built ovens for the United States army in four wars. The luncheon was graciously presided over by H. Carl Wolf, president, Atlanta Gas Light Company, and chairman of the Advisory Committee of the Industrial and Commercial Gas Section.

Mr. Brogan told how the master menus are prepared, and how these menus are the finest army menus ever used. He said that it is no wonder the average rookie gains from 10 to 20 pounds after going into the army. He showed an interesting assortment of slides which depicted the cooking and of baking equipment for various size army messes, and told how army cooks are being trained in large numbers to man the ever-growing number of army kitchens.

No one who heard Mr. Brogan could doubt that gas is making a good record for itself in feeding the army, that gas equipment is meeting the severe requirements of preparing food that rivals that which is served in the better grade restaurants. The large variety of baked goods, most of which are baked in modern, streamlined gas bake ovens, was used as an example. Also, this

is the first army to be fed toast, and hundreds of mechanical gas toasters have been installed for this refinement in camp fare.

Gas Forum

D. W. Reeves, Oklahoma Natural Gas Company, Tulsa, who was chairman of the committee that prepared the program, presided at the Monday afternoon Industrial and Commercial Gas Session. Robert L. Mallory read the valuable paper prepared by Albert H. Koch, Minneapolis-Honeywell Regulator Company, Atlanta, Ga., entitled, "A Discussion of Industrial Gas Controls as Used in War Plants." Mr. Mallory is Houston manager of Minneapolis-Honeywell. It was evident from hearing Mr. Koch's paper that the high production records being set up in war plants are possible largely because of the accurate control to which heat treating and other operations are subject. Contrasting this condition with the hit-and-miss methods of World War I, Mr. Koch stated that not only were high production records being maintained but that the uniform quality of articles of war being produced under mass production methods is giving the men in our army and navy far better ordnance and ammunition with which to fight. Examples of the types of controls being used on industrial gas furnaces in war plants were given, following which Mr. Mallory conducted an interesting question-and-answer period.

Gas air conditioning, which a few years ago was in the research and early development stage, is now an important production tool in an ever-increasing list of war plants. James C. Patterson, manager, Dehydration Division, Carrier Corporation, explained, within the limits of official censorship, the manner in which gas air conditioning—chiefly of the dehydration type,—has gone to work in war production. Entirely new production techniques developed since the last war are dependent upon accurately controlled air conditioning. It is a tribute to the joint efforts of the gas industry and to the air conditioning manufacturing industry that equipment has been developed and was ready to be produced in ample quantities, first when the defense effort started and later when the over-all war production program got under way.

"What is war doing to gas in the food service industries?" Alfred T. Pitman, J. C. Pitman & Sons, Inc., an expert on quantity cookery and on conditions in the restaurant industry, answered this question and expressed his opinion that in spite of the increasing load being placed on the restaurants in most cities gas cooking and baking equipment could be kept in good working order for the duration. He said that quick repairs must be the order of the day in order to avoid more extensive repairs necessitated when minor repairs to equipment are overlooked.

Mr. Pitman urged all gas companies to maintain their commercial sales and maintenance forces at full strength and to encourage these men to get on the closest, friendliest terms with their hotel, restaurant, and institutional customers. This will not only help to keep gas equipment operating at its maximum efficiency but will be a tower of strength when the war is over and highly competitive conditions return, he said.

Speaking specifically of today's fat fryers, Mr. Pitman pointed out that the consumption of deep-fried foods is continuing to increase, and predicted that it will be a long time before the peak is reached. At the conclusion of his talk, Mr. Pitman presented all who were present at the session with a large, beautifully colored print of our national emblem.

As a closing feature of the final industrial and commercial gas session, an open forum was held on the timely subject, "Industrial and Commercial Service, Sales and Maintenance Problems in War Time." Short presentations were made by: H. G. D'Spain, Mississippi Public Service Co., Amory; James P. Dresen, Public Service Co. of Colorado, Denver; J. Mason Guillory, New Orleans Public Service Inc.; and P. J. Guelfi, Gulf States Utilities Co., Baton Rouge, La.

These men told how big increases in industrial sales are being handled by representatives of their companies, and discussed some of the tricks of the trade which are making natural gas click in war plants in their territories. Together with Mr. Reeves, these men constituted a panel which answered questions in connection with papers given at both the morning and afternoon sessions. As the session closed, lively discussion by men from all natural gas areas left no doubt that the men who are representing the gas companies in the front line of war production plants know their business, and that they together with industrial gas are playing an important part in making the Arsenal of Democracy hum!

INDUSTRIAL AND COMMERCIAL GAS ADVERTISING FOR JUNE

The National Advertising Committee of the Industrial and Commercial Gas Section, J. P. Leinroth, chairman, and F. B. Jones, vice-chairman, announces that full-page advertisements will appear in the trade and business magazines listed below during the month of June. These advertisements, which will appear in 16 publications reaching a total audience of 288,587, are prepared in cooperation with the Committee on National Advertising as a part of the Association's national advertising campaign.

General Manufacturing

BUSINESS WEEK (June 20)—Industrial *GAS* is vital to war Industry . . . Use it Wisely!

Metals Industry

THE IRON AGE (June 11)—We're doing better—since that *GAS* engineer was here!
STEEL (June 22)
METAL PROGRESS
INDUSTRIAL HEATING

Baking Field

BAKERS WEEKLY (June 15)—For the *best-fed fighters* in the world . . . *GAS* baking!

Ceramic Industry

CERAMIC INDUSTRY—This dish has enlisted . . . with millions of his cousins! *GAS*-fired dinnerware is only *one Ceramic "must"* with our armed forces.

Hotel and Restaurant Field

HOTEL MANAGEMENT—Armies must be fed well! . . . and modern *GAS cooking* has pitched in "for the duration!"

CHAIN STORE AGE (Fountain and Restaurant Section)—The "Military" cooks with GAS!

Ballard Transferred to Detroit

George L. Ballard

GEORGE L. BALLARD, industrial sales engineer for the Panhandle Eastern Pipe Line Co. for the past ten years, has been transferred to the Detroit office of the company. For five years Mr. Ballard was located in Missouri taking care of industrial sales. For the past five and a half years he has been stationed in Springfield, Ill., carrying on the industrial activities for his company in that state. Mr. Ballard will now have charge of all industrial sales promotional work for Panhandle Eastern.

Mr. Ballard has taken an active part and interest in the Industrial and Commercial Gas Section of the American Gas Association as well as the gas industry as a whole. During the year 1941 he was chairman of the Mid-West Industrial Gas Sales Council of the Industrial and Commercial Gas Section of the A. G. A.

Mr. Ballard has already taken over his new duties in Detroit and will move his family to that city about June first.

Papers on Industrial and Commercial Subjects

A NUMBER of papers that were presented by outstanding industrial and commercial gas men at the A. G. A. Natural Gas Convention in New Orleans are available in reprint form. Copies can be secured by addressing the Industrial and Commercial Gas Section, American Gas Association. If you did not attend the convention, get the papers that are reprinted.

The papers available are:

"Let's Spend a Day With Natural Gas in an Army Camp!" Daniel J. Brogan, The G. S. Blodgett Co., Inc., Burlington, Vt.

"How Close Relations With Industrial and Commercial Customers is Helping the War Effort in the Birmingham Area." Oscar C. Warren, Birmingham Gas Co., Birmingham, Ala.

"A Review of Industrial and Commercial Gas in the War Effort in the South and Southwest." W. N. Ford, United Gas Pipe Line Co., Shreveport, La.

"Industrial and Commercial Gas Equipment—The Outlook for the Duration." Karl Emmerling, The East Ohio Gas Co., Cleveland, O.

"A Discussion of Industrial Gas Controls as Used in War Plants." Albert H. Koch, Minneapolis-Honeywell Regulator Co., Atlanta, Ga.

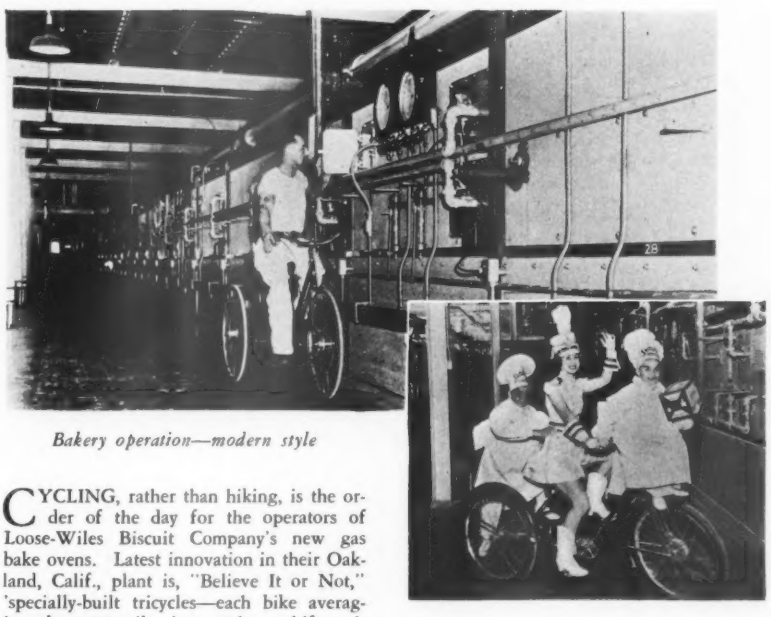
"Uses of Gas-Operated Air Conditioning Equipment in the War Industries." James C. Patterson, Carrier Corp., Syracuse, N. Y.

"Gas in the Food Service Industries." Alfred T. Pitman, J. C. Pitman & Sons, Inc., Atlanta, Ga.

Open Forum—Industrial and Commercial Service, Sales and Maintenance Problems in War Time. J. Mason Guillory, New Orleans Public Service Inc., New Orleans. P. J. Guelfi, Gulf States Utilities Co., Baton Rouge, La.

"Natural Gas Limitation Order L-31 and How It Affects Commercial Customers" Raymond Little, Equitable Gas Co., Pittsburgh, Pa. (Presented on behalf of the American Gas Association at 9th Annual Meeting, Food Service Equipment Industry, Inc., Uniontown, Pa.)

'Cyclists?—No, Just Gas Oven Operators in a Bakery!



Bakery operation—modern style

CYCLING, rather than hiking, is the order of the day for the operators of Loose-Wiles Biscuit Company's new gas bake ovens. Latest innovation in their Oakland, Calif., plant is, "Believe It or Not," 'specially-built tricycles—each bike averaging about 15 miles in an 8-hour shift as it carries the baker back and forth between the controls of the gas ovens.

The tricycle-mounted operator shown above is adjusting the controls of one of two such gas-fired bake ovens—almost twice as long as a football field—installed by Loose-Wiles at this 15,000 windowpane daylight bakery. Each oven contains several hundred gas burners and has—again "Believe It or Not"—seven miles of pipes to supply gas, air and ventilation as well as six miles of electric wiring for controls and illumination inside the oven. Biscuits and cookies go through on wide metal belts in from three to six minutes, and come out perfectly baked.

★ Gas at Work ★ ON THE WAR PRODUCTION FRONT

The Midwest Industrial Gas Sales Council devoted its last meeting of the year entirely to gas in war production.

◆

War production expansion has given a big boost to gas radiant tubes—and these same radiant tubes have given a bigger boost to war production.

◆

Methods of determining locally the cost of disaster meals to be furnished by restaurants have been worked out by the Red Cross and the American Restaurant Association.

◆

Ammunition for personal use—war production articles: Furnaces for Manufacturing Tanks and Other Military Vehicles, INDUSTRIAL HEATING, May, p. 567; Small Radiant Cups Direct Heat to Work, METAL PROGRESS, February, p. 217; Shell Making Highly Developed in Recent Years, INDUSTRIAL GAS, March, p. 10.

◆

Sign outside of one large war production plant: "We have been asked for the impossible. Let us do it, as usual."

◆

In the aircraft industry forced convection gas furnaces are most popular for heat-treating operations ranging from 300° to 1300°, where speed and uniformity of treatment are factors.

◆

Scrap aluminum is reclaimed in 20,000 pound gas furnaces that resemble huge teapots and are cast into 100 pound ingots in one Westinghouse plant. Scrap from other Westinghouse plants help to feed these furnaces.

◆

Several enameling plants are using their tunnel kilns for annealing armor-piercing steel stock. Tunnel kilns in potteries seem to be next in line.

◆

Many intricate ceramic parts, which are fired in gas kilns, are replacing aluminum castings and other forms of scarce metals.

◆

Glass lehrs—gas-fired—are producing needed parts. Aviator's goggles, bullet-proof glass, instrument dials for planes are being turned out precisely and accurately.

◆

Gas is speeding the manufacture of bombs for Berlin.

◆

Bigger gas outputs can be looked for when the changeover of civilian plants is completed.

◆

Restaurant and hotel business in war production areas is booming from the influx of war workers. Is the gas equipment in eating places near your war plants being kept up to par?

Distribution Engineers Tackle Many New Problems at Seventeenth Annual Conference

THE multitude of new problems facing the distribution engineer as a direct result of the war received the close attention of several hundred delegates at the annual Distribution Conference held concurrently with the Natural Gas Section convention in New Orleans, May 4-6. Consisting of one joint meeting, two morning sessions and three luncheon conferences, this seventeenth annual conference was an outstanding success.

The complexity and magnitude of the jobs facing those responsible for delivery of the steady stream of gas to essential war industries as well as to the base-load domestic customers, were made apparent in the address of the chairman, C. S. Goldsmith, distribution engineer, The Brooklyn Union Gas Co., Brooklyn, N. Y., at the joint meeting. "In addition to our older problems, the war has created directly many new ones and has served to intensify some of those with which we have been struggling for many years," he pointed out.

New problems listed by Mr. Goldsmith are: the safeguarding of mains, valves, governors, etc., against sabotage, the setting up of plans to cope with the effects of bombing raids, the necessity of finding a substitute solder for gas meter repair, the changes resulting from drastic curtailment in the use of automotive equipment, and the almost certain loss of hundreds of key employees because of the Selective Service Act.

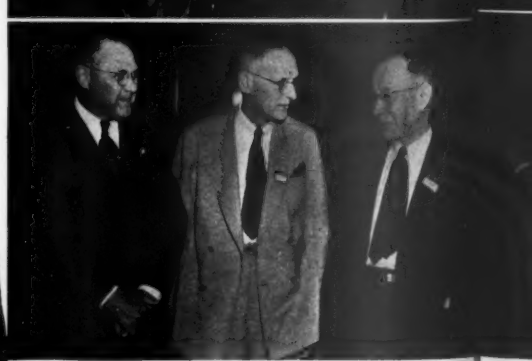
New Thinking Needed

Warning the distribution men that they would have to change their whole line of thinking, he said: "what we have done in the past is no clue to what we can and will have to do in the future." However, he declared optimistically that "the war will force us to do many things we have always wanted to do but didn't quite have the nerve to begin." As a case in point, Mr. Goldsmith mentioned the scarcity of tin and the necessity for finding a satisfactory substitute for the former standard 50-50 meter bar solder for meter work.

Pointing out that during the past few years more and more distribution engineers have come to believe that customers should possess a basic knowledge of the operation and maintenance of domestic appliances, Mr. Goldsmith called for a program of education of employees and customers. "Immediately after the war began, we were shocked by the sudden realization that our customers were ignorant even of how to turn off the gas," he said. "Now it is necessary to instruct the vast number of our customers how to turn off meters in case of air raid damage," he said, pointing out that widespread disruption of gas pressures resulting from a severe bombing attack would require hundreds of emergency workers to assist the regular service force in aiding customers to relight their appliances.

T. H. Kendall, Pittsburgh; Harold L. Gaidry, New Orleans, chairman, Technical Section; James F. Pollard, Seattle
Top picture—Don E. Herringshaw, Jackson; H. G. Swearingen, Peoria; Ted Kennedy; Chairman C. S. Goldsmith, Brooklyn; Robert B. Allen, Detroit

Below—Standing: R. M. Schmidt, New Orleans. Seated: C. J. Smith, Charleston, S. C.; E. L. Horner, St. Louis, Mo.; J. T. Stine, Jr., New Orleans, La.; F. A. Durr, New Orleans; J. G. Eberhart, New Orleans



H. E. Meade, New Orleans; Chairman Goldsmith; Vice-Ch. H. B. Andersen
Top picture—Frank A. Engel, Elizabeth, N. J.; R. J. Kuhn, New Orleans; V. C. Hoddick, Rochester; H. W. Nicolson, Newark, N. J.; J. J. Martin, Asbury Park, N. J.

Recognizing the many problems facing the industry today and the need for cooperation, Mr. Goldsmith concluded: "If ever we needed an organization to serve as a clearing house for ideas, we need it now."

The Monday morning meeting opened with a brief address of welcome to New Orleans by H. E. Meade, vice-president in charge of operations, New Orleans Public Service Inc.

Meter Adjustments

A valuable discussion of the adjustment mechanics of a tin diaphragm meter by A. V. Brashear, superintendent of meters, Michigan Consolidated Gas Co., Detroit, was the opening technical presentation. Mr. Brashear outlined an easy way to understand the adjusting moves which should be made and what can be expected in the way of proof change after these moves have been made. He also discussed the mechanical defects which influence or interfere with the application of the adjusting moves.

"Engine Adjustments for Wartime Fuels," a timely subject of wide application, was ably discussed in an informative paper by C. E. Smith, Research Laboratories, Ethyl Gasoline Corp., Detroit. This subject was also presented at the Motor Vehicle Conference in New York, May 25 and 26, and is reported in detail elsewhere in this issue.

J. T. Stine, Jr., New Orleans; A. C. Cherry, Cincinnati; T. H. Kendall, Pittsburgh, chairman, Subcommittee on Meters and Metering

Following the Monday morning meeting, the delegates divided into two groups and attended the two luncheon conferences, namely that on Meters conducted by J. H. Collins, New Orleans Public Service Inc., chairman of the Subcommittee on Meters and Metering, and that on Construction and Maintenance led by T. H. Kendall, Equitable Gas Co., Pittsburgh, chairman, Subcommittee on Construction and Maintenance. Both of these conferences were characterized by lively discussions and extended into the late afternoon.

Mr. Collins summarized the work of the meter group and suggested possible economies in manpower and materials which might be effected for wartime and post-war use. These were discussed from many viewpoints and much valuable information gathered. Further attention was given to the solder situation and it was the concensus of the group that mixtures containing 30% of tin or less are not satisfactory for meter work.

Right: C. E. Smith, Ethyl Gasoline Corp., Detroit

John W. McDonald, Marcy Nick, Charles D. Wagner, Franz Hellwig, Anthony G. Guell, and E. J. Hennessey, all of New Orleans

L. K. Richey, Detroit, chairman, Subcommittee on Pipe Coatings and Corrosion; H. F. Steen; A. V. Brashear, Detroit; J. H. Collins, New Orleans, chairman, Subcommittee on Meters and Metering; Gilbert Estill, Tulsa

Top row: G. W. Martin, Dallas; Russell H. Coe, Glenwillard, Pa.; A. C. Cherry, Cincinnati; A. G. Ford, Aurora, Ill.; Chairman Goldsmith (at microphone leading "Happy Birthday" song in honor of H. W. Nicolson); J. H. Collins, New Orleans; H. W. Nicolson, Newark, N. J., chairman, Subcommittee on Pipe Coatings and Corrosion

Other subjects discussed included: possible development of a standard meter in various sizes in order to conserve materials; relative merits of various weights of diaphragm leather; use of substitute materials in the metering industry; testing of large positive displacement meters on consumers' premises; and factors governing the ratio of rated meter capacity to consumer demand. It was also reported that a gas-fired machine had been developed for removing the fronts and backs from small tin case meters. This machine will remove from 500 to 700 5-Lt. meters per eight-hour day, it was stated.

The luncheon conference on Construction and Maintenance opened with a brief report by Chairman Kendall covering the activities of the subcommittee assigned to this subject. A report of the Subcommittee on Pipe Coatings and Corrosion by the chairman, L. K. Richey, Michigan Consolidated Gas Co., Detroit, brought out some interesting

(Continued on page 243)

Production and Chemical Group Maps Wartime Gas Plant Operating Economies

THE full weight of experience and knowledge of several hundred technical men in the gas industry was brought to bear on the mounting problems of the gas industry's operating divisions at the Joint Production and Chemical Conference held at the Hotel Pennsylvania, New York, May 25 and 26. Reflecting profound changes in the gas production situation today as compared with former years, the conference paid undivided attention to discussion of such subjects as increasing plant capacity to meet wartime demands, gas plant maintenance, protection of property and personnel, selection of coals for wartime carbonization, new chemical developments, and conservation and salvage operations.

Shortened to two days to allow the gas men to return promptly to their vital jobs, this year's conference packed into this period more material than was formerly presented in three days. Much of the information was presented informally at the four round-table luncheon conferences Tuesday afternoon which were divided as follows: Carbonization and Coal, B. P. Mulcahy, Citizens Gas & Coke Utility, Indianapolis, chairman; Production of Carburetted Water Gas, R. E. Titus, Kings County Lighting Co., Brooklyn, chairman; Production of High B.t.u. Gas, H. M. Blain, New Orleans Public Service Inc., chairman; and Chemistry in the Gas Industry, W. R. Fraser, Michigan Consolidated Gas Co., Detroit, chairman.

R. H. Arndt, superintendent of gas manufacturing, Consolidated Gas Electric Light & Power Co. of Baltimore, chairman of the Production Committee, and R. J. Sheridan, head analyst, The Brooklyn Union Gas Company, and chairman of the Chemical Committee, acted as chairmen of the conference.

A major problem resulting from the war is that of providing adequate gas fuel for the mush-rooming growth of war industries. This was emphasized at the opening session by Major Alexander Forward, managing director, American Gas Association, who ably summarized the gas production situation today as compared with a year ago. Major Forward's remarks are printed elsewhere in this issue of the A. G. A. MONTHLY.

George S. Hawley, president, American Gas Association and president, The Bridgeport Gas Light Co., greeted the conference and paid tribute to the contributions of the technical men during the emergency.

Emphasizing the importance of increased efficiency in these critical times, E. W. P. Smith, The Lincoln Electric Co., Cleveland, Ohio, reviewed the application of arc welding in gas plant maintenance. He pointed out that welding can contribute materially to the conservation of metals by salvaging parts, mending pipe lines, repairing broken castings, and in numerous other ways. He spoke of the use of arc welding to fabricate structural steel; to replace castings with steel construction; to hard-surface grates, crushers, gears, conveyor buckets, screw conveyors; and to build up shafts and car wheels.

The reduction of maintenance costs and the salvage of materials by the use of "Metalizing" were described by George B. Johnson, Minneapolis Gas Light Company. Mr. Johnson defined metalizing as "a process of obtaining a mechanical bond between two metals, or a metal and a non-metallic material, by spraying pure metals on metallic surfaces without the use of flux and without preheating the object to be coated."

Pointing out that metalizing has made tremendous headway in the last three years, Mr. Johnson said: "It seems to me that the gas industry would be a fertile field for the use of this new process, since maintenance in a gas plant is always a battle with corrosion caused by gas fumes and moisture. Coatings can be applied that will resist corrosion, and the possible savings are obvious when we consider the cost of a solid stainless steel shaft and that of a shaft made of

Harold L. Gaidry, New Orleans, chairman, Technical Section; D. P. Hartson, Pittsburgh, chairman, Technical Section Committee on War Activities; J. V. Postles, Philadelphia, past-chairman, Technical Section. Top picture—R. J. Sheridan, Brooklyn, chairman, Chemical Committee and co-chairman of the Conference; Dr. Gilbert E. Seil, Norristown, Pa.; T. L. Robey, Washington, D. C., vice-chairman, Chemical Committee

M. P. Vovak, Joliet, Ill.; R. W. Stafford, Chicago; Ivan M. Roberts, St. Louis; Charles F. Turner, Cleveland; W. E. Stackhouse, Philadelphia

Dr. A. R. Powell, Pittsburgh; L. E. Knowlton, Providence; L. J. Willien, Chicago. Top picture—R. H. Arndt, Baltimore, chairman, Gas Production Committee and co-chairman of the Conference

P. Vickers and Dr. Gilbert E. Seil of the E. J. Lavino Co., demonstrating apparatus for quantitative determination by gas liberation. Top picture—Colonel Edward B. Towns, Office of Civilian Defense, New York, and Harold L. Gaidry, chairman, Technical Section

ordinary steel coated with stainless steel."

"It may develop," he continued, "that we can save the expensive replacements of generator shells by applying a coat of non-corrosive metals to the inside of the shells before they are put into operation." He also stated that metalizing may be a solution to the corrosion problem of dam sheets on gas holders.

New principles in the heating of Koppers-Beckers coke ovens were explained in a paper by Dr. W. C. Rueckel, Koppers Company, Pittsburgh. The new principles include recirculation of waste gases to effect long flame combustion when underfiring rich (coke oven) gas and the enrichment of lean (blast furnace and producer) gas to obtain maximum carbonizing speeds. These two developments are the result of a comprehensive research program carried on by the Koppers Company to obtain data on the fundamentals of combustion of the several gases used to underfire coke ovens.

Increasing Plant Capacity

The vitally important problem of "Increasing Plant Capacity To Meet Wartime Demands" was covered in a comprehensive paper by L. J. Willien, Public Utility Engineering & Service Co., Chicago. An outstanding authority on this subject, Mr. Willien outlined peak load gas methods developed since 1935. Briefly, they may be summarized as follows:

Coal gas

Producing a 450 B.t.u. coal gas in stopped end horizontal retorts and enriching to 520 B.t.u. increases gas production 10%. The final mixture in this case consists of about 90% coal gas and 10% propane and furnace gas mixture.

An increase of 48% is reported by the use of carborundum bottoms known as Silfrax; combined wtih the Retort Oil Process the increase is 110%.

Carbonizing a mixture of coal and oil (8.5 gals. per ton of coal) will increase gas production 11% if gas is diluted to 530 B.t.u. with producer gas. If diluted with blue gas, gas production is increased 22%. (This method was described by C. J. Ramsburg and G. V. McGurl of the Koppers Co. at the 1940 A. G. A. Convention.)

Diluting coal gas with blue gas instead of producer gas will increase gas production about 13%. (Method described by R. E. Kruger, Rochester Gas and Electric Corp., at the 1941 A. G. A. Convention.)

Water Gas

The use of a shorter operating cycle increases capacity between 10 and 15%.

One company reports that increasing the generator blast rate from 9 M cu.ft. per minute to 11 M cu.ft. per minute increased the capacity of an 11 ft. set from 3000 M cu.ft. to 5000 M cu.ft. per day.

An increase of 21% was obtained by using about 20% of the total on the backrun.

Mixed Gas

The amount of water gas that can be mixed with coal gas without causing appliance trouble can be increased by raising the water gas to 650 B.t.u.

The possibilities of reforming oil in a water gas machine and making a gas similar to coal gas was discussed.

High B.t.u. Gas

A satisfactory substitute for natural gas has been made in a water gas machine using butane instead of gas oil.

A butane air gas of about 1530 B.t.u. has been mixed with natural gas up to 70% and distributed to 58,000 consumers with satisfactory results.

The report of the Chemical Subcommittee on New Developments, V. J. Altieri, chairman, was distributed at this meeting. Containing a valuable summary of chemical highlights during the year, Mr. Altieri's report called attention to the fact that the American gas industry produces an abundance of chemicals and basic raw materials of high quality which are definitely primary products rather than by-products.

Leading off the Monday afternoon session, Gilbert F. Tyler presented a paper prepared by W. M. Pierce, The Employers' Liability Assurance Corp., Ltd., Boston, on "Scientific Methods Applied to Accident Prevention." He cited the possibilities of research work involving chemical and physical methods of detecting hazards and urged the A. G. A. Chemical Committee to investigate this subject.

An interesting paper on "Corrosion of Stainless Steel by Flue Gases" by Louis Shnidman and Jesse S. Yeaw, Rochester Gas & Electric Corp., was presented by Mr. Shnidman. It brought up-to-date previously reported investigations on the corrosion of metals, such as may be used for flue linings, by the condensing products of combustion of gaseous fuels.

The authors reported that 13 samples of "stainless" steels of varying composition and from different sources were exposed to combustion products for a period of two years. For the first half of this period, little corrosion was observed. After 15 to 19 months, corrosion began at a rapid rate on nearly all samples and in some cases was

R. M. Conner, Cleveland, director, A. G. A. Testing Laboratories; V. J. Altieri, Everett, Mass., chairman, Subcommittee on New Developments; E. W. P. Smith, New York; F. J. Pfluke, Rochester, chairman, Subcommmittee on Water Gas

R. L. Hicks, Chicago; Dr. W. A. Kemper, Baltimore; H. D. Lehman, Philadelphia, chairman, Gas Conditioning Committee; Dr. E. W. Guernsey, Baltimore, vice-chairman, Gas Conditioning Committee; E. R. Tomkins, Chicago

very severe. On the basis of the final results, flue linings made of these "stainless" steels, with the exception of those containing molybdenum, would have an average life expectancy of about 3 to 4 years on continuous exposure to an atmosphere of condensing combustion products, it was stated.

An improved engineering model of the coke oven which is valuable in the selection of coals for wartime carbonization was described in a paper by J. H. Swiniarski, M. C. Cryan and V. J. Altieri, of the Eastern Gas & Fuel Associates, Everett, Mass. The new model, Mr. Altieri said, makes it "possible to conform with important and essential similarity requirements that must be met when running coking tests in a model to simulate the stresses, strains, plastic flow, and other behavior characteristics developed during the coking of different coals."

A paper by Frieda Fuchs, The Pennsylvania State College, on the "Microanalysis of Ash," reporting on a simplified method of coal ash determination, was presented by Dr. A. W. Gauger. By using samples of coal of 3 to 50 mg., ash determinations were made giving results consistent with those of standard determinations. The heating time required was 20 to 30 minutes.

H. D. Lehman, The Philadelphia Gas Works Co., chairman of the Gas Conditioning Committee, reviewed briefly the work of his committee. He mentioned the study of organic sulphur which has been initiated at the Institute of Gas Technology by the Technical Section and the Rochester Gas and Electric Corp., the progress made in the development of standards for the protection of gas appliances against suspensoids and the organization of a group to discuss the problem of dust in natural gas.

Organic Sulfur Study

Dr. W. A. Kemper and Dr. E. W. Guernsey, Consolidated Gas Electric Light & Power Company of Baltimore, presented the results of a study of "Organic Sulfur Compounds in Water Gas and Coke Oven Gas." Included in the study were a carburetted water gas of 500 B.t.u.'s per cubic foot manufactured by the back-run process using heavy oil, a coke oven gas after light oil recovery, and a mixed city gas. The authors reported that the principal organic sulfur compounds appear to be carbon bisulfide, carbon oxysulfide, and thiophene (including probably homologues). The distribution of organic sulfur among the various compounds for water gas was found to be, on the average, 35% carbon bisulfide, 36% carbon oxysulfide, 30% "thiophene"; and for coke oven gas, 61% carbon bisulfide, 33% carbon oxysulfide, 6% thiophene.

The selection of anthracite for water gas operations was discussed in a paper by L. L. Newman, The Pennsylvania State College, who pointed out that as a result of the present war demand for metallurgical coke, it is becoming increasingly difficult for water-gas plant operators to obtain coke at a reasonable price. A resumption of the use of anthracite in place of coke, Prof. Newman stated, might mean a repetition of changeover difficulties experienced when the trend was in the opposite direction. He called attention to the importance of selecting correct grades of coal for any particular type of operation and presented in tabular form information from practical operation of water gas generators with anthracite.

W. E. Stackhouse, The United Gas Improvement Co., presented a paper discussing the development of a continuously recording colorimeter for determining trace concentrations of certain impurities in industrial gas.

A joint session of the production and chemical group with the Public Utility Motor Vehicle Conference was held Tuesday morning with H. L. Gaidry, chairman of the Technical Section presiding. The feature of this session and one of the outstanding events of the conference was the address of Lt. Col. Edward B. Towns, Infantry, assistant liaison officer between Second Corps Area and the Second Civilian Defense Region.

Civilian Defense System

Speaking before a capacity audience, Col. Towns gave an interesting description of the civilian defense set-up and answered a barrage of questions from the floor concerning specific gas utility problems ranging in subject matter from identification insignia to protection of gas plants from air raids and sabotage.

Pointing out that a utility plant can be no better protected than the community in which it is located, Col. Towns advocated unity of command and control under the Office of Civilian Defense or under military supervision. He said the keynote of civilian defense is embodied in the old saying, "Heaven protects those who protect themselves." In other words, everyone must pitch in to help create an effective defense system.

Utility trucks and key personnel have an unquestionable right to move during blackouts, he said, but urged that proper identification should be ironed out in advance. He advised utility men who were needed to maintain essential services not to sign up as air raid wardens, etc., as they were more useful on the job.

Conference Papers

Complete bound sets of the Distribution Conference papers, and papers given at the Joint Production and Chemical Committee Conference and Conference on the Operation of Public Utility Motor Vehicles, will soon be available at 75 cents per set. Please address your order to the Technical Section, American Gas Association, 420 Lexington Ave., New York, N. Y.

Of particular interest in the discussion of camouflage, was Col. Towns description of the use of black oil smoke pots to conceal targets. He said that experiments were being made with various types of smoke screens but no final conclusions had been reached. The drawback to the smoke pots is principally the large personnel required to service them in sufficient quantity to do an effective job.

The Tuesday morning meeting closed with a valuable review of truck and tire rationing regulations by Jean Y. Ray, chairman of the Committee on Operation of Public Utility Motor Vehicles. Mr. Ray reviewed the steps taken by utilities to meet the transportation situation and presented the highlights of material discussed at the separate conference on this subject.

Luncheon Conferences

The entire Tuesday afternoon program was devoted to round-table luncheon conferences. These lively and well-attended meetings brought out a wealth of practical information on specific operating problems.

An innovation was the holding of a separate round-table conference on the Production of High B.t.u. Gases, a subject formerly included with the Water Gas Conference. A feature of this meeting was a report by C. V. Spangler, of J. F. Pritchard & Co., covering experiences with butane and propane substitutes for natural gas in the Pittsburgh district. It was stated that the interchangeability factor worked out successfully and the only weak link in this method is the future availability of liquefied petroleum gases. After discussing a wide variety of topics the meeting concluded with a report by R. E. Howard of Purdue University on experiments with the production of a 75-80% methane content gas using a coal hydrogenation process under high pressure.

The conference devoted to "Chemistry in the Gas Industry" included a demonstration of apparatus for "Quantitative Determinations by Gas Liberation" by Dr. Gilbert E. Seil, technical director of the E. J. Lavino & Co., Philadelphia; a review by Joseph A. Shaw of the method for the determination of hydrogen sulphide and mercaptans; and a discussion by V. J. Altieri of ammonium sulphate with special reference to crystal structure.

T. L. Robey, Washington Gas Light Company, vice-chairman of the Chemical Committee, led the discussion of gas conditioning and distribution problems, following which Channing W. Wilson, Consolidated Gas Electric Light & Power Company of Baltimore, spoke on "A Method for the Determination of the Quantity of Suspended Material in Gas." Mr. Wilson described a procedure suitable for the determination of suspended material carried by gas when present in concentrations of less than one gram per million cubic feet of gas. The apparatus is an impingement device adapted for use on low pressure gas, with which the suspended material is deposited

on a microscope cover slip and subsequently weighed.

The utility of the method described by Mr. Wilson was illustrated by several examples, such as the determination of suspended vapor phase gum particles, the detection of oil fog, and the determination of the efficiency of filters for protecting pilots against stoppage.

A large part of the Water Gas Conference was devoted to a discussion of "Substitute Fuels for Coke in Water Gas Operation," and much valuable material was brought out. R. J. Horn described a method of increasing water gas plant capacity by installing thin wall lining in the water gas generator. Mr. Horn's method is presented fully elsewhere in this issue of the MONTHLY. Several new water gas installations were also described.

Nine major topics were covered at the Carbonization and Coal Conference, namely: sulphate recovery, use of oil with coal in coke ovens, coal and coke handling improvements, gas production during the emergency, light oil recovery, producer operation with anthracite, coke requirements for various uses, selection of coals for carbonization, and laboratory coal sampling.

At the conclusion of the Production and Chemical Conference, one delegate made the following remark: "This type of meeting is an eye-opener. It does more for the operating man and the advancement of the industry generally than anything I know of. It's stimulating, provocative and informative." It was all of that.

Critical Period for Utility Operators Seen at Motor Vehicle Conference

NOTWITHSTANDING the fact that they have X cards for gasoline and priority ratings that ordinary civilians envy, the commercial automotive transportation operators are facing one of the most critical periods in their experience. This situation, unparalleled in the history of this country, was made apparent to the transportation men who attended the highly informative annual Conference on the Operation of Public Utility Motor Vehicles May 25 and 26 in New York.

With Jean Y. Ray, chairman of the A. G. A. Committee on Operation of Public Utility Motor Vehicles, presiding, the wartime regulations and fleet operating problems were thoroughly reviewed at one all-day session, a joint meeting with the Production and Chemical Conference, and an open forum.

Jean Y. Ray (right) and Linn Edsall, chairman and vice-chairman, respectively, of the Committee on Operation of Public Utility Motor Vehicles

War Yardstick

Warning against "wishful thinking" in his opening remarks, Chairman Ray said that the one and only yardstick being used at Washington to judge applications for scarce materials is the question: "Is the vehicle involved going to do anything toward winning the war?" He referred briefly to the year's problems, such as tire, gas and truck rationing, and predicted that parts would be rationed shortly.

Major Alexander Forward, managing director, American Gas Association, in a short talk complimented the operators on their unity of effort to solve their problems.

Of special interest and timeliness was the address by E. C. Paige, Ethyl Gasoline Corp., Detroit, who spoke on "Engine Adjustments for Wartime Fuels." Stating that the army transport group is in the process of hiring hundreds of skilled operating men, Mr. Paige warned of an impending shortage of skilled mechanical labor available for service and maintenance of automotive equipment. "The labor problem," he said, "is perhaps even more serious to the fleet operator than the restrictions on replacement equipment and parts."

Turning to mechanical problems, he pointed out that in the past year or two many fleets operating heavy duty equipment have been using recently developed heavy duty oils which contain various additives as detergents and anti-oxidants. Since many of these additives are strategic metals and because the armed forces are contracting for large amounts of this type of lubricant, he said that the civilian operator may be forced to use straight mineral oils in the near future.

With civilian fuel taking a secondary place in the present refining program, Mr. Paige said that these fuels are becoming less volatile and of lower octane number. Present regular grade gasoline has an octane rating of about 71, ASTM Motor Method, and may go as low as 69 by next winter, he asserted. He cautioned that additional maintenance costs can be expected if modern commercial engines are not adjusted to accommodate this change in fuels. He then listed the adjustments which should be made. Mr. Paige's paper evoked considerable discussion and he answered numerous questions from the floor.

George S. Hawley, president, American Gas Association, and president, The Bridgeport Gas Light Company, greeted the delegates and spoke of the appliance servicing system in Bridgeport where the territory has been divided into sections and calls answered at different periods to lighten the transportation load.

The Monday afternoon session was devoted primarily to a discussion of "Truck Operation Under Present Conditions," with W. J. Cumming, Maintenance Section, Office of Defense Transportation, Washington, D. C., as the principal speaker. Mr. Cumming reviewed the government regulations and gave valuable information on operation of utility trucks for the duration. E. W. Jahn, Consolidated Gas Electric Light & Power Co. of Baltimore, presided at this meeting.

A joint meeting with the Production and Chemical Conference was held Tuesday morning at which Mr. Ray summarized the information on truck and tire rationing which had been presented to the transportation group. The featured speaker at this meeting was Lt. Col. Edward B. Towns, infantry, assistant liaison officer between the Second Corps Area and the Second Civilian Defense Region.

The Motor Vehicle Conference concluded with a closed session Tuesday afternoon at which operating problems were discussed with great frankness. S. G. Page, Equitable Auto Co., Pittsburgh, conducted this final meeting.

DISTRIBUTION CONFERENCE

(Continued from page 239)

information on research projects now under way, particularly the study of the action of anaerobic bacteria and its location without excavating. The conference was advised by cathodic protection advocators that protecting pipe cathodically will stop this type of corrosion.

Adaptability of normal operating methods to emergency needs was the subject of much discussion. Plans of protecting distribution facilities against sabotage and bomb damage received close attention and various company defense organizations were outlined. This group also discussed emergency repair methods of mains and services; safety precautions and fire extinguishing equipment; methods of freeing gate valves, frozen on account of gums and internal corrosion; and the use of gas masks, asbestos suits, etc., in the extinguishing of large leaks and fires.

The third luncheon conference, devoted to Work on Consumers' Premises, H. W. Nicolson, Public Service Electric & Gas Co., chairman, was held the next afternoon

(Tuesday). This conference evoked lively discussion on the following subjects: appliance venting; the "repeat call" problem; educating customers in maintaining and operating equipment; conservation of tires and automotive equipment; special tools and methods employed in servicing work; pilot outages, gum troubles and filters.

The Wednesday morning session opened with a message from Major Alexander Forward, managing director, American Gas Association, who complimented the Technical Section upon its outstanding work in connection with A. G. A. war activities. He mentioned particularly cooperation in the preparation of the book "War Protection of the Gas Industry," and the fine support given the Committee on War Activities.

This session consisted of three highly interesting presentations—two papers and a movie. In the first, F. A. Engel, Elizabethtown Consolidated Gas Company, Elizabeth, N. J., spoke on street tools and methods devised to facilitate maintenance work in the distribution system. The various devices described were illustrated with lantern slides. The second presentation was a movie showing the Lirette-Mobile project —a 200-mile natural gas pipe line, including a 25-mile lake crossing. Presented by W. B. Poor, United Gas Pipe Line Co., Shreveport, the movie was a popular feature.

Reconditioning Mains

The final paper on this program was a valuable discussion of "Reconditioning Steel Mains in Detroit," by R. B. Allen, Michigan Consolidated Gas Co., Detroit, who described that company's experience in reconditioning four miles of steel main in 1941. The main was exposed, cleaned and pits deeper than ⅔ of the pipe wall thickness were filled with welding rod and the pipe was then coated and wrapped. Mr. Allen stated that the work was done without any interruption of service and an analysis of the job indicated that reconditioning could be done at a cost appreciably less than that of renewal.

Pointing out that the savings to be obtained by reconditioning are primarily dependent upon the size of the pipe concerned, Mr. Allen concluded: "We may generally expect the economies to be greater as the pipe size increases. It is doubtful that there would normally be any justification for reconditioning 2-inch mains, but savings of from 25% to 50% can be obtained on 4-inch to 8-inch sizes. The labor and material involved in the actual coating of pipe amounts to approximately 30% of the total reconditioning cost and is chargeable to capital accounts."

The Distribution Conference closed with a joint symposium with the Natural Gas Section men Wednesday afternoon at which protection of property and personnel during the war emergency was thoroughly discussed. Harold L. Gaidry, New Orleans Public Service Inc., chairman of the Technical Section, presided at this session which gave an off-the-record picture of what various companies are doing to meet war problems.

"As the Proverb Says"

SOME gas engineers have amusing hobbies but few surely can provide such endless fun as adapting proverbs to the advancement of gas. That is what F. Bowen, of the Leigh Gas Department, England, has done. The following were published in *The Gas Times*, London:

"A bird in the hand is worth two in the bush; but a bird in the gas cooker is worth all three."

"Once bitten twice shy; but gas consumers are never once bitten."

"Look before you leap and keep to gas."

"One swallow does not make a summer but a gas cooker makes summer (and winter) cooking a pleasure."

"Love flies out the window when poverty comes in the door; but 'love' will come back if you buy her a streamlined gas cooker."

"Count your many blessings; you will be one short if you haven't a gas water heater."

"Watched pots never boil—unless they are on a gas ring."

"Instead of saying 'let's get down to brass tacks' say 'let's get on with cooking by gas.' "

Display men may find some of these useful for adaptation to their own show room and window displays.

Lone Star Promotions

H. G. CORNATZAR, assistant treasurer, and T. J. Uhl, assistant secretary of the Lone Star Gas Company, have been elected treasurer and secretary respectively, President, D. A. Hulcy has announced. The new officers assume the duties formerly discharged by the late D. L. Cobb who died May 9.

Mr. Cornatzar joined the organization Jan. 1, 1917 in Fort Worth. He has been assistant treasurer since 1922, and in this position functioned also as personnel officer.

Mr. Uhl joined the company in 1919 and has been assistant secretary for many years. He has been in charge of all state and federal reports and handles many of the insurance records of the company.

Mineral Art Gallery Shows Gas Scenes

A UNIQUE collection of paintings epitomizing the basic mineral industries of Pennsylvania, cornerstone of her prosperity, has found a suitable permanent place of abode in the new Mineral Industries gallery at the Pennsylvania State College. The formal opening of the gallery took place on Saturday evening, April 11. At that time nearly 150 oil paintings, water colors, prints and drawings went on exhibition.

The collection, brought together by Dean Edward Steidle and other members of the faculty of the School of Mineral Industries during the last 12 years, pays tribute in glowing colors to the fundamental steel, oil, gas, coal and ceramic industries which underlie the economic development of the state.

Included in the collection are paintings depicting scenes in and around coal mines, views painted in the scorching heat of the steel mills, pictures of towering oil and natural gas rigs and other general panoramas in the Pennsylvania oil fields; views of petroleum refineries, natural gas plants, lime kilns, coke ovens, stone quarries, brick plants, glass works, and many other scenes of mineral-producing and processing activities.

Geological Survey in West Virginia

ANOTHER volume, just published, has been added to the growing list of authoritative publications of the West Virginia Geological and Economic Commission. Volume 14 written by Dr. Herbert P. Woodward under the supervision of Paul H. Price, state geologist, Morgantown, W. Va., covering the Silurian System of West Virginia, is the first of a projected series of reports which treat the systemic geology of the state. This series will cover each of the geologic systems for the state as a whole in the light of their development in the Appalachian area.

The extensive deep drilling campaign for oil and gas now in progress in that area makes the release of this volume timely. It throws considerable light upon possible gas and oil bearing structures in the state.

Ballad on Saving Gas

(From "The Gas Times," London)

THE Whitehall warriors—noble band—
Have now decided it's a sin
To waste good gas throughout this land
Which should be used to beat Berlin.
No Engineer must care a pin
How far his sales may fall away.
His slogan now, through thick and thin—
"You've got to save more gas today."

Gone are those days when salesmen scanned
Each "House to Let" with eager grin,
And visits to the landlords planned
To get another gas fire in.
Now they have other yarns to spin,
Their Whitehall führers to obey;
Thuswise their pleadings must begin:
"You've got to save more gas today."

Industrial men must understand
Fresh furnace sales won't save their skin,
But learn to deal with each demand
And lose it in the factory din.
There, close by every salvage bin
Let posters urge—(B.C.G.A.!)
"So Huns may get it on the chin,
You've got to save more gas today."

Prince Therm, if all your kith and kin,
Would herald Victory on her way,
Their cry must be, this war to win,
"You've got to save more gas today."

ARTHUR LESLYE.

Laboratories

GEORGE E. WHITWELL, *Chairman*
R. M. CONNER, *Director*
W. H. VOGAN, *Supervisor, Pacific Coast Branch*

Changes in Approval Standards and Laboratories' Procedure Streamlined to the War Tempo

F. R. Wright

By FRANKLIN R. WRIGHT

Chief Inspector, American Gas Association Testing Laboratories

SINCE the beginning of the war in Europe and more particularly since Pearl Harbor, both industry and individuals have been faced with the problem of readjustment to conform to the changing picture. The gas industry was one of the first to establish a national defense committee under the sponsorship of the American Gas Association, and subsequently, organized a Subcommittee on Emergency Modification of Requirements under the A.S.A. Sectional Committee, Project Z21, A. G. A. Approval Requirements Committee. These two groups were particularly active and had made considerable progress in placing our industry on a war footing prior to our entrance into the conflict. Since that time, of course, the picture has changed so rapidly that many readjustments in the plans originally proposed, as well as additional steps, have been necessary.

War Standards

The Subcommittee on Emergency Modification of Requirements was set up to provide means for handling immediately changes in approval and listing requirements, necessitated by shortage of materials needed for our country's war efforts. This subcommittee is so constituted that desired modifications in American Standards for Gas Appliances and Accessories can be cleared through and made effective within the matter of a few days.

With the further curtailment in the use of critical materials for civilian use, coupled with the necessity of reducing the amount of metal used in the production of gas appliances and accessories for defense housing and army cantonments, our Association at the request of the War Production Board has already drafted, through its committees, tentative war emergency requirements for domestic gas ranges and gas water heaters. The first-named has already been cleared through the American Standards Association under its emergency procedure and approved as American Emergency Standards. At this writing a proposed limitation order No. L-23a has been released by the War Production Board for panel discussion relating to gas ranges which call for compliance with the American Emergency Standards referred to above. It is probable that, by the time this article is published, final action in regard to this matter will have been taken.

By orders issued by the War Production Board in recent weeks, jackets and certain other parts have been eliminated from heating boilers. Likewise, no automatic storage water heaters can be produced equipped with sheet metal jackets. In addition, sizes of storage water heaters permitted has been limited to those of 20, 30 and 40 gallon capacities. In view of limitation order No. L-79, of course, stocks of gas appliances in the hands of dealers were frozen as of the date of such order and can be sold at retail only on a priority order carrying an A-10 rating or better.

Price Regulations

Price ceilings for many types of gas appliances were established some time ago and last week President Roosevelt announced a sweeping General Maximum Price Regulation affecting virtually all commodities and services at wholesale and retail. Undoubtedly further restrictions and limitations on materials and prices will be necessary as the war progresses. We are all in this, however, with the aim of winning this war for our country and the United Nations at the earliest possible time. The temporary reverses our country has suffered in the war so far are disappointing, but, win this war we surely will in spite of Hitler, Hirohito, and Mussolini and their misled and unscrupulous hordes.

The American Gas Association's testing and research laboratories located in Cleveland and Los Angeles, in addition to participating actively in the development of war emergency requirements, have had to make many adjustments due to curtailment in the production and sale of gas appliances for civilian use. Due to reduction in testing activities the Laboratories have been endeavoring to extend their services to manufacturers and utility companies in the research field and are in position to cooperate further along this line, including assistance to any manufacturers who have research problems relating to production items directly connected with the nation's war activities. They have the facilities and an experienced staff which, it is felt, can be of considerable assistance in this way.

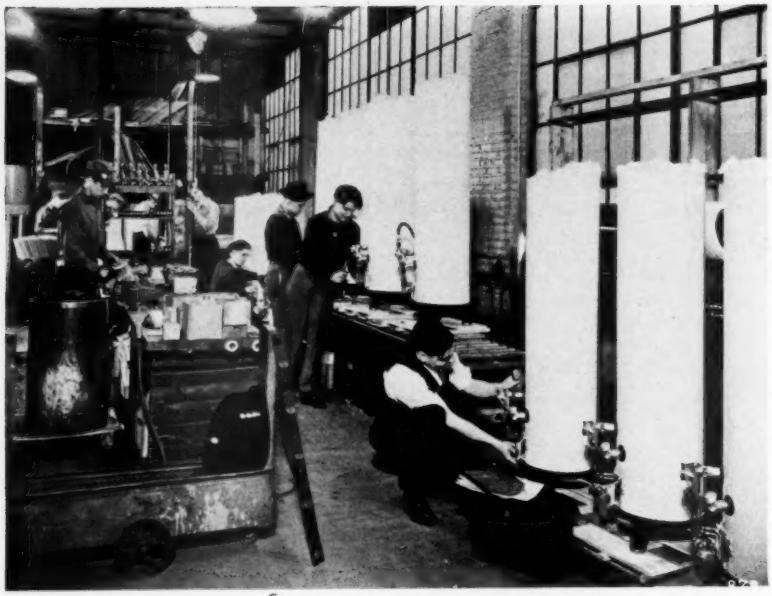
The Laboratories have also been attempting to cooperate directly with the Federal Government and the various branches of the Army, Navy and Air Corps in carrying on testing or research for them. One such project has already been assigned to us for solution and every effort is being made to work out with various governmental agencies plans for additional research problems.

While everything has been subordinated to the war effort, the Laboratories have recently put into effect certain changes in procedures which are felt to be of much interest to our manufacturer member and other cooperating companies. The Laboratories' Managing Committee at its meeting last fall approved the continuance for one year of approval on appliances and listing on accessories, the 5-year period of certification of which expires normally during the year 1942, providing no changes affecting safety have been made in the requirements since the original approval. Any manufacturers who have equipment, certification of which expires this year, and who wish to have approval continued for 1943, may secure details in regard to the necessity of submitting such equipment for test by contacting the Laboratories.

Inspection Procedure Revised

In order to improve its service to manufacturers, the Laboratories early this year revised their procedures with respect to inspection reports and have, since then, been confirming inspector's verbal reports at the time of plant visitation by written reports prepared by the field inspectors and given to the manufacturers at the time of the factory inspections. This has eliminated the delay previously existing between the time of completing factory inspections and supplying the manufacturer with a written report confirming the Laboratories' findings.

While detailed verbal reports have for many years been given to manufacturers upon completion of inspections, the new procedure enables the manufacturer to have available immediately a written record which he can turn over to the engineering and production departments to carry through on any required changes in production. This plan, which has been followed in the case of several hundred unannounced inspections, made at manufacturers' plants since the first of this year has, apparently, met with the hearty approval of manufac-



Gas water heaters, like other gas appliances bearing the Laboratories' Approval Seal, are subjected to rigid plant inspections of production units

turers and has simplified handling of such matters on the Laboratories' part. The splendid cooperation given the Laboratories by manufacturers in making stenographic help available for the typing of reports is gratefully acknowledged.

A further simplification of Laboratories' procedures is planned which should likewise be of considerable assistance to our cooperating companies. For some time the problem of revisions in manufacturers' Certificates of Approval, to take care of changes permitted as the result of inspections, has been of considerable concern and has been given extensive study. A related problem has been that of some manufacturers who, not having complete blue-prints and manufacturing specifications, have attempted to employ the descriptions given on the approval certificates in the production of their appliances. As these descriptions are, by necessity, abbreviated and incomplete, they were not adapted to such usage. To eliminate this the Laboratories have been providing manufacturers, on request, with duplicate copies of blue-prints and descriptions made of all appliances at the time of their test.

Many manufacturers have not taken advantage of the availability of this material, consequently it has been decided to eliminate the usual description on the Certificates of Approval for gas appliances and supply with such certificates complete copies of the Laboratories' descriptions. These descriptions, along with the Laboratories' copies, can be revised by our field inspectors at the time changes are allowed on inspections at manufacturers' plants.

Where extensive pressure drop data must be calculated at the Laboratories, and other changes are approved as a result of correspondence or the submission of equipment for retest, such approved changes can be covered by letter which, in turn, the manufacturer can attach to his certificates and descriptions. This will eliminate the necessity of returning the certificates to the Laboratories each time a change in construction is allowed. We wish to give Wm. M. Myler, Jr., of the Surface Combustion Corporation due credit for this change in view of his request some time ago that a plan be worked out whereby it would not be necessary to return a large quantity of certificates to the Laboratories frequently for revision. We believe that the procedure outlined will work out to the mutual advantage of both the manufacturer and the Laboratories.

As a further means of conserving expense to our cooperating manufacturers, and to simplify procedures, the Laboratories this year changed the listing arrangement of appliances in the Directory of Approved Gas Appliances and Listed Accessories by eliminating the listing of liquefied petroleum, propane and butane-air models in detail where the same models at the same ratings were also approved and listed for natural and manufactured gases. In such cases liquefied petroleum listings were included by reference. This served in reducing considerably the number of lines of listing in the Directory for many manufacturers and their dealers.

The Laboratories also placed into effect the first of this year revised listing fees in the Directory which formerly were $1.50 per line per year. Through the present procedure, the second 100 lines is charged for at the rate of $1.00 per line, and all over 200 lines at $0.50 per line only. These rates are for member companies, the charges being slightly higher, as customary, for nonmembers. Certain other changes were made in charges for factory and other inspections, the details of which can be secured by communicating with the Laboratories.

In view of the Defense Housing requirements which must be met during the current year, a considerable number of gas appliances will be required for such purposes. Due to the copper conservation order, it has been necessary for manufacturers to eliminate largely the use of this material in the production of appliances and accessories. Gas appliances which have probably been

Inspection of gas pressure regulators during assembly at factory. Materials and dimensions of all accessories bearing the Laboratories' Listing Symbol must conform with the models certified by test

more critically affected than any others, have been circulating tank, multi-coil and instantaneous type water heaters. Several manufacturers of the small side-arm type circulating tank heaters undertook some time ago to develop cast iron heating elements to replace the copper coils formerly employed in such models. Because of the difficulty of complying with American Standard approval requirements when such construction was employed, the requirements committees were called upon to reduce efficiency requirements to 65% for heaters of this type. Such a change was approved and made effective for heaters of this particular class.

Due to the fact that American Standard Approval Requirements for Gas Water Heaters did not fully cover this detail, some manufacturers have been supplying water heater burners with sheet metal air shutters which were not of a rust-resisting material or provided with a rust-resisting finish. The Laboratories, through their field inspections, found that some of these air shutters were corroding or rusting in position so as to prevent them from being readily adjusted. Upon referring the matter to the requirements committees, it was decided that the requirements should be interpreted as written to call for rust-resisting air shutters, and water heater manufacturers were accordingly notified. On this same subject the subcommittee has interpreted the requirements that fixed means, such as set screw adjustments, must be provided to maintain air shutters in their proper position after adjustment.

Housing Project Appliances

In view of the government's housing activities in recent years, the Laboratories have been called upon frequently to inspect appliances supplied to such housing projects. Unfortunately, in some cases, appliances were found bearing the Laboratories' Approval Seal which did not conform fully with the approved models. In a few cases it has been necessary for manufacturers to change as many as 2,000 appliances in a single project in order for the Laboratories to be in position to permit its Seal to remain on them.

Such instances, and wherein manufacturers have been put to considerable expense in having retests conducted and in making changes in the field, emphasize further the necessity for manufacturers to adhere closely in production to the models approved by test since, in practically all instances, appliances approved by our Laboratories are required for federal projects, defense housing, army cantonments, etc. Some 15 or 20 army camps were visited by the Laboratories' inspectors during the past several months. In some instances, complications arose due to appliances bearing the Laboratories' Approval Seal which did not conform fully with the production models, thus necessitating changes in them.

In spite of the above comments, appliances produced by manufacturers bearing the Laboratories' Approval Seal, in general conform closely to the approved models. Manufacturers have become increasingly cooperative in contacting the Laboratories prior to putting into production any changes whatsoever in their approved equipment. This is worked out for the mutual advantage of both themselves and the Laboratories. If it were possible to evolve some sort of a merit rating or similar system to give recognition to manufacturers who adhere in their production strictly to the construction approved by test, much saving would be effected with resulting good will for the industry. While the condition is not as serious as it may sound from the preceding remarks, the nearer we can come to conforming in production to the exact construction approved, the better service our industry can give to the public at a saving in both trouble and expense.

Examination of ranges on manufacturer's assembly line during one of several factory inspections conducted each year

Due to the shortage of materials, manufacturers particularly of central heating equipment have been faced with the necessity of having their appliances approved with several types or makes of controls so that one will be available in case the supply from another source is not adequate. Acceptability of many such substitutions can readily be determined by the Laboratories upon advice from the manufacturer of the make, model numbers and sizes which he desires to use.

Listed accessories being required on practically all gas appliances, the total pressure drop through all the controls is usually the determining factor except in the case of gas pressure regulators where the regulating capacity of the control must be taken into consideration. Likewise, the substitution of snap-acting for modulating controls cannot be permitted without test. This also applies, and more particularly so, to the substitution of safety pilots, since the performance of these accessories on an appliance must be checked for compliance with the requirements by actual test.

One of the items relating to approved appliances which seems to cause some confusion in the industry is the matter of correct marking of units. Required marking is covered by the respective approval and listing standards and by the American Gas Association Requirements for Official Marking of Approved Gas Appliances and Listed Accessories. A few of the items of marking, however, will be touched upon here since they are the ones which most frequently are involved on inspections.

First of all, every gas appliance must be properly marked including the attachment of the Laboratories' Approval Seal before being distributed from the manufacturer's plant. Such marking must be permanently attached and so located that it is in an easily observed position. In other words, appliances must not be supplied unmarked with separate marking tags furnished for attachment by jobbers or dealers.

In view of difficulties encountered by utility companies and others in the field, due to central heating gas appliances not being marked or having improper marking plates attached to them, the requirements committees ruled some time ago that all central heating gas appliances must have marking plates permanently attached to the jackets or other principal parts of the appliances before being distributed. This was more of a problem with this type of equipment which, in many cases, is shipped "knocked-down" than with other classes of gas appliances. The Laboratories have, however, received excellent cooperation from the manufacturers recently in the marking of units in line with this ruling.

Combination gas appliances, that is, appliances designed to operate with two or more fuels, have always been required to be marked with a statement reading in effect "Gas Section Only A. G. A. Approved." In the case of appliances approved for liquefied petroleum gases, they must carry a marking permanently attached

to the name plate bearing the Approval Seal, or immediately adjacent thereto, specifying that the appliance is approved for use only with approved liquefied petroleum gases. Some manufacturers, however, prefer to mark specifically their appliances equipped for butane and those equipped for propane, which is satisfactory. Where they are supplied for liquefied petroleum gases, proper orifices should be furnished for use with both propane and butane unless the manufacturer knows in advance the exact type of gas on which the appliance will be installed and equips and marks it accordingly.

Appliances must be marked by the manufacturer before shipment in accordance with the type of equipment they carry. It has always been contrary to the Laboratories' policies for appliances equipped for natural and manufactured gases to be converted over by dealers for installation on propane or butane for the reason that, in most cases, there are vital differences in the construction of appliances for use with liquefied petroleum gases as compared with those for natural and manufactured gases. In addition, supplemental marking is mandatory, as indicated above. Likewise, appliances equipped for use with liquefied petroleum gases, butane-air, etc., should not be converted by dealers for use with natural and manufactured gases without first obtaining approval of such change-over from the Laboratories.

Due to present emergency conditions the Laboratories have arranged with some of the larger jobbers and dealers to inspect appliances in their warehouses after they have been changed over and before they are installed bearing the Laboratories' Approval Seal. Similar arrangements may be worked out for other organizations if they so desire.

Ask Air Conditioning Performance Data

IN order to obtain as complete information as possible on gas summer air conditioning equipment, the American Gas Association's Joint Committee on Air Conditioning is now enlisting assistance of a widespread number of utilities to submit their field performance experiences on existing and new installations. The purpose of this request is to consolidate all factual knowledge and any information that can be useful to manufacturers of such equipment as well as for charting the research program now under way at the A. G. A. Testing Laboratories.

As pointed out by Leon Ourusoff, engineer of utilization, Washington Gas Light Company, and chairman, Joint Committee on Air Conditioning, it is not sufficient to obtain scattered information as has been done in the past. To draw constructive conclusions data should be uniformly reported and be available from various localities with different climatic and other conditions. With this in mind the committee has prepared typical field test data forms. These have been distributed to representative gas companies but they are also available to any company desiring to participate in this work.

Two sets of forms have been prepared. One set covers general information, investment costs, annual operating costs and revenue which can be readily secured from representative field installations. The second set of forms is for the purpose of securing technical performance data with units in full operation which requires an experienced engineer and test instruments to record the necessary information. These reports will be correlated and analyzed by the Testing Laboratories. When sufficient data have been secured, the results will be made available for general industry use.

Further information and copies of the summer air conditioning field test data forms may be obtained by addressing Mr. R. M. Conner, Director, American Gas Association Testing Laboratories, 1032 East 62nd Street, Cleveland, Ohio.

A. G. A. Inspection Reports Speeded

GREATLY accelerating submission of inspection reports to individual gas equipment manufacturers, a new simplified procedure adopted early this year by the American Gas Association Testing Laboratories has proved highly successful after extensive trial.

Whereas previously Laboratories' inspectors on completion of a thorough examination of all appliances and accessories at a plant would send their reports to the Laboratories which in turn communicated with the manufacturer, under the new procedure the inspection report is prepared at the plant as the last item of business and presented directly to the plant manager or head of the company. In this manner a written record is made immediately available for his use in placing any necessary changes in production. In addition, it provides an opportunity for the manufacturer to review the report with the Laboratories inspector and thereby clarify any points which might not otherwise be fully understood.

STRUGGLE OF RESOURCES

(Continued from page 212)

production line. It is a titanic struggle of resources. The world knows that this one will be won by the side that has the most petroleum, plus the best organization to make it available to the fighters.

Armies still march on their stomachs. But petroleum has changed everything else. Without petroleum we could have no flying fortresses. You in the industry have the solemn responsibility of producing it in such quantities and within such time limits as will make it possible for our ships and our tanks and our bombers to speed to victory.

The United Nations are depending on you.

Corregidor has fallen but we will fight on.

Gas-Electric Training

SOME 3,300 electric distribution men of the Consolidated Edison Company of New York, Inc. have taken a course in the fundamentals of gas distribution operation —location of gas leaks, making repairs, use of tools and equipment—as part of that company's preparation for emergencies. On the other hand, a large number of gas supervisory employees have spent a week studying cable splicing and overhead distribution of electricity.

La Guardia Field Uses Gas

LA GUARDIA FIELD, New York's great airport, uses gas in several ways to serve the 4000 passengers arriving or departing daily. Gas cooks the food in the field's three restaurants, heats the vast quantities of water required for cleaning and sterilizing, produces the live steam with which the crews keep airplane motors spick and span.

Gas Sales at Peak

HEAVY new demands for natural and manufactured gas were met in 1941 by the Electric Bond and Share System companies, according to the annual report. This system sold 281,381,000,000 cubic feet of gas in 1941, an increase of 12 per cent over the previous year and the highest sales figure ever reached by this group of companies.

Personnel Service

SERVICES OFFERED

Salesman with A1 reference and sales ability. Experience in selling gas ranges for 22 years, calling on better dealer and department store. Desires a connection with Metropolitan New York or utility company's sales department. Former position terminated on account of war. **1443.**

Manager, college degree, with more than twenty years' experience in management of manufactured gas properties, both coal and water gas. Familiar with operation in Spanish country. Not particular about location. **1444.**

Engineer, M.E., 15 years' utility experience in all branches of utilization and sales of manufacturing gas, particularly **Industrial Engineering** and **Sales.** Also experience in air conditioning, industrial application of electric heating and private power plant competition. Desire position with a utility, manufacturer or consultant. **1445.**

POSITIONS OPEN

Sales Manager for manufactured gas utility with knowledge of directing residential, commercial and industrial sales and promotional activities. **0367.**

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